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[Original Communication.]

ZYGADENUS NUTTALLII: THE DEATH CAMOSS OF THE WEST.

BY J. U. AND C. G. LLOYD.

In the Rocky Mountain regions, extending west to the coast, there are several species of plants with which it would be well for physicians and pharmacists to become acquainted. They belong to the species known to botanists as Zygadenus, and are closely related to the plant that produces Veratrum. Dr. H. S. Goodell, who has met with a number of accidental poisonings from these plants, thinks it is one of the most violent poisons of the vegetable kingdom.

The plants have a close resemblance to the Wild Onion, as they have a white bulbous root and similar linear leaves. Children often mistake the plant for Wild Onion, and with fatal effect. One species in particular, *Zygadenus venenosus*, as the specific name implies, has established a reputation for its poisonous properties. It is called Hog's Potato and Death Camoss in the text-books.

Dr. Goodell, having been called to treat several cases of poisoning, sent us a specimen of the plant, which proved upon examination to be the *Zygadenus Nuttallii*, which is closely related to the aforenamed plant. The doctor writes as follows regarding his experience with the plant:

"I find it to be a powerful narcotic poison. One of my patients, a girl 9 years old, claimed that she only broke the stem of the plant and rubbed the juice on her lips and lapped it off with her tongue. Severe convulsions followed, lasting one and one-half hours, the most violent that it has been my lot to witness in a practice of thirty-five years; twenty-four hours later she had one of an hour's duration. I gave strong coffee from the start, used the bromides and gelsemium, stood over the patient three days and nights constantly. I write this that you may know there is a potency here not often met in the vegetable kingdom.

"*Symptoms.*—Extreme thirst, constant vomiting, dilatation of the pupil and coma, and (sequel) inflammation of the stomach.

"One young lady, not included in the above, says she tasted the plant and it made her very sick; she also states that the taste was fascinating and followed by a desire for more, and that it required all her will-power to resist."

This plant is now being investigated physiologically by Prof. Roberts Bartholow, and its constituents are being investigated by us. Perhaps the result will be of more than usual interest.

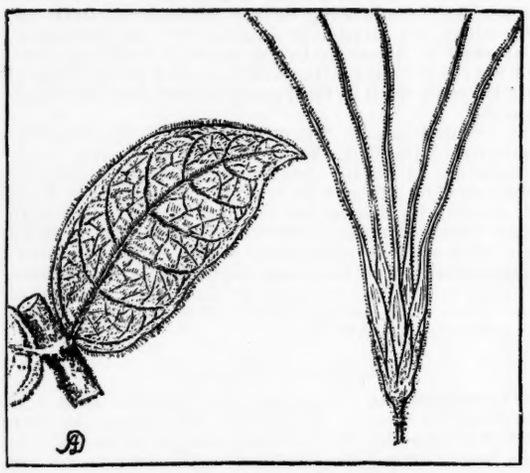


Fig. 1.—Oliver's Strophanthus hispidus.

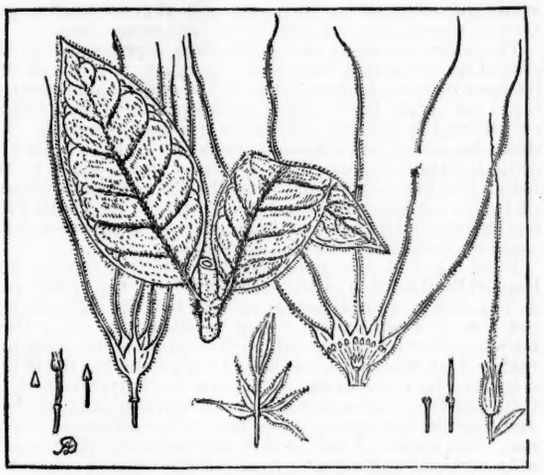


Fig. 2.—Strophanthus hispidus. (Annales du Muséum.)

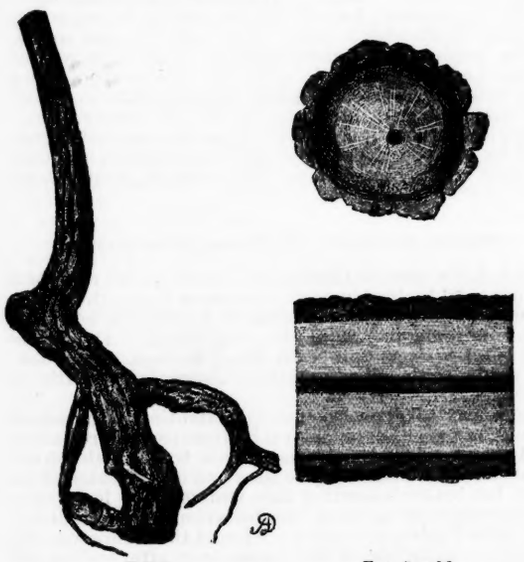


Fig. 4.

Figs. 5 and 6.

Three portions of the stem and root.

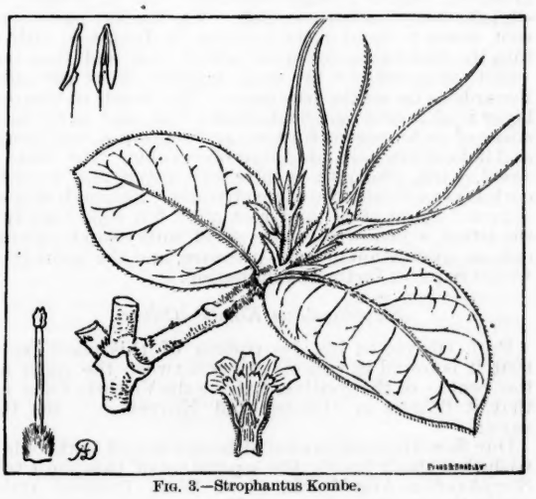


Fig. 3.—Strophantus Kombe.

NOTE ON STROPHANTHUS.

As a supplement to our article on Strophanthus, on page 143 of our last year's volume, we take from the last issue of Thomas Christy's "New Commercial Plants and Drugs" (No. 10) those passages which refer to the two species which are of special interest medicinally. Mr. Christy says:

The foliage of this plant, the *S. Kombe*, of commerce, was sent to me, together with a supply of seed and pods; in fact, was the first large shipment of *Strophanthus* received in England.

There are several botanical differences in the herbarium specimens of leaves sent me from Inhambane, and those of *S. hispidus* in the herbarium at Kew; therefore, I have preferred to give a drawing of my plant (approved as *S. hispidus* by Prof. Oliver), and also a drawing taken

from a plant found by Mr. Smithman at Sierre Leone, and figured in the *Annales du Muséum d'Histoire Naturelle.*

Oliver's Strophanthus Hispidus.

This drawing was made from the leaves received by me from Inhambane, and which accompanies the shipment of seeds made to me in October, 1886.

The leaves differ in the veins being less prominent on the under surface, in the hairs being more appressed, and the leaf being more downy on the under surface. The seeds are smaller, with short awns, and the hairs on the seeds dark-brown and more spreading.

Together with this seed and leaf I received a piece of the root, which was described in the *British and Colonial Druggist*, to whom I am indebted for the engravings, and for the following description which accompanies it; I have retained the same numbering as in the journal:

The Stem and Root of the Strophanthus.

This is an exact representation of the portion of the Kombe stem and root in the possession of Mr. Thomas Christy, F.L.S., drawn to a scale of one-sixth. In general terms, it may be said that the central and more or less vertical part is the trunk of this aggressive parasite, while the arms issuing thence, nearly at right angles, partake in some degree of the "root" characteristics.

The stem, or such part of it as is represented by the actual specimen now before me, is fairly cylindrical, and its most obvious feature is the rugose and deeply furrowed layer of cork bark which envelops the entire trunk, overlying the thinner and denser true bark beneath. The diameter, so far as we have it, varies from 1¼ to 2¾ inches, although there is some little evidence which leads to the belief that the larger part, from the elbow at the left hand of figure 4 downwards, has been lightly covered with withered leaves and grasses, so that it shortly begins to acquire some of the characters of a root-stem.

Figs. 5 and 6 are respectively the transverse, and longitudinal section of the stem, cut from the upper part shown in Fig. 4, and herein is depicted the ash-colored, not very soft pith, about 1 inch in diameter, the yellowish white, hard, tough wood, with the minute, nodular, and rather dark-tinted resin cells, which gradually deepen in color and increase in size as the exterior is approached. A thin, papery, dark-colored layer of bark is next reached, and outside this again comes the softer suberous covering, from about 0.1 to 0.17 inch in thickness. The remarkably straight and even "grain" of the wood is shown in Fig. 6, which also depicts the several structures of which it is composed—pith, wood in faintly defined annular markings, the thin rind or bark, and the corky exterior. These two sections are of the natural size.

In chipping or sawing this wood, a remarkable odor is given off, which greatly resembles that of scraped but slightly decaying horse-radish. The smaller parts of the root, down to about 0.5 or 0.4 inch in diameter, still retain the corky exterior layer, which now and then is divided transversely by deep annular clefts extending inwards as far as the true bark. The whole of this cork layer is of a gray, greenish-brown tint, and in the interstices of its numerous furrows and rugosities, tiny mosses and lichens are here and there observable. The taste of wood, bark, and pith is intensely bitter, and even the cork layer exhibits the same character, although in a less degree. From stem and root alike, but especially from the latter, a yellowish-white, acrid, milky sap is squeezed out, on application of some pressure, and the resin is one which requires further examination.

Strophanthus Kombe (Oliver).

Prof. Oliver, in his description of this plant, states that it is found in various places between the coast and the centre of the continent above the Victoria Falls, and that it flowers in October and November. He then says:

Our flowering specimens, although not all that could be wished, I think justify the separation of this plant from *Strophanthus hispidus* D. C. of West Tropical Africa, one of the arrow poisons of Nigritania. *S. Kombe* differs in the few-flowered inflorescence and the narrower (linear, not lanceolate) and shorter calyx lobes which do not reach to the narrow sinuses of the throat, as in *S. hispidus.* The firmer texture of the calyx and bracts, and the early fall of the latter, appear to be aditional minor distinctions. The physiological action of the Kombe poison obtained from the seeds has been investigated by Prof. T. R. Fraser, who includes it in the class of cardiac poisons ("Proc. Roy. Soc.," Edinb., 1860–1870, p. 99).

Dr. Kirk describes the plant as a woody climber, growing in the forests both of the valleys and hills. The uppermost branchlets are of the thickness of a stout quill, often being scabrous, from the persistent indurated tuberculate bases of the coarse, deciduous hairs, which clothe the annual leafy shoots; the stems are much compressed at the nodes.

Chemistry and Pharmacology.

Great difficulty has so far been experienced in obtaining the active principle strophanthin in a crystalline condition. Usually it was obtained in form of a powder. It is obtained from the seed, the pods, the external coating of the pod, and, in fact, from all available parts of the plant. It appears to be very powerfully toxic, so small a quantity as $\frac{1}{30}$ grain having killed a large dog. The average dose for man is stated to be $\frac{1}{100}$ grain. After many experiments had been made as to the most satisfactory method and strength for the preparation of the *tincture*, the following formula has been adopted as a standard, and it is most advisable, seeing the powerful properties of the drug, that no variation in the strength or preparation should be made from this formula, published by Prof. Fraser in the *British Medical Journal:*

Reduce the seeds, freed from stalks and hairs, to a moderately fine powder, and dry the powder for twelve hours at a temperature of from 100° to 120° F. One ounce, or one part of the powder, is then packed in a percolator, and ether, free from alcohol or water, is added until the powder is saturated and the ether begins to drop, when the percolation is stopped for 24 hours, after which it is allowed to go on slowly until 10 fluidounces, or 10 fluid parts of ether, have been used; if the last running of the ether is not almost colorless more should be used. The powder is then removed from the percolator and exposed to the air, or heated to 100° F. if necessary, to drive off the ether, any lumps being broken up, and the uniform, nearly white, dry powder is repacked in the percolator, and allowed to macerate in contact with sufficient alcohol of 84% for 48 hours; after which alcohol of 84% is passed slowly through until 20 fluid parts of percolate have been obtained.

[The original directs "Rectified Spirit." The Spiritus Rectificatus of the Brit. Pharm. has the spec. grav. 0.838, and contains 84.08% by weight, or 88.76% by volume of absolute alcohol. It may be conveniently prepared from U. S. alcohol by mixing 945 volumes of the latter with enough water to make 1,000 volumes, or 924 parts by weight with water to make 1,000 parts. Approximately, the same result is reached, with more simple proportions, by mixing 9¼ volumes of U. S. alcohol and ¼ volume of water. Pure U. S. alcohol would, of course, answer the same purpose.—ED. AM. DR.]

Strophanthus Hispidus.

The accompanying engraving of *S. hispidus* (Fig. 2) is taken from the *Annales du Muséum*, and was made from a specimen found by Mr. Smithman at Sierra Leone. The flower has a funnel-shaped corolla; the anthers are not terminated by tail-shaped segments. The plant is covered with bristly hairs. Stem woody, sarmentose, fasciculate; peduncles repeatedly forked; furnished with acute bracts. Divisions of the calyx very deep, narrow, and acute. Corolla reddish and funnel-shaped. Tube narrowed at the base and widened at the summit. Corona consisting of ten nail-shaped obtuse appendages; limb with five short divisions, tapering into threads two decimeters long; anthers sessile, hastate, connivent, acute, and not terminated by awns; ovary, of two distinct follicles, and covered with white bristly hairs. Style simple, stigma capitate.

Chloral Hydrate and Fehling's Solution.

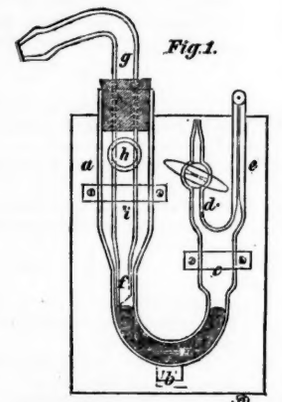
MR. J. J. THOMAS, of London, in a paper on butyl-chloral recently read by him, made a statement that "the reduction of Fehling's solution by chloral hydrate is no doubt due to the formate produced by the alkali." This statement is taken exception to by Mr. J. E. Saul, of London, who writes to the *Pharmaceutical Journal* (June 11th) as follows:

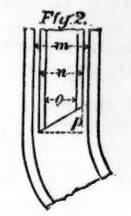
"Recently I had occasion to call attention to the action of Fehling's solution on chloral hydrate (see before, p. 856) and I then ascribed the decomposition to the chloroform produced. The matter at the time had only incidental interest, but before hazarding this statement, I had taken the precaution to examine the behavior of an alkali formate with Fehling's solution. I found that there was absolutely no reduction of the copper, even after boiling for some time, nor did the use of Trommer's, Pavy's, Schmiedeberg's, Cresswell's or Holland's modifications of the cupric test result in a different experience. I therefore unhesitatingly ascribed the decomposition only to the chloroform produced, the fact being well known that this body readily reduces an alkaline cupric solution. The non-reduction of copper by butyl-chloral tends to confirm my statement, as no chloroform is formed on treating with caustic alkali. Curiously enough, Hoffmann and Power, in their standard work on the examination of medical chemicals, ascribe the rapid reduction of copper by chloroform to the formation of a minute trace of sodic formate. This opinion they probably base on the fact that chloroform, when superheated with aqueous or alcoholic potash, is split up, forming potassic formate and chloride. On the other hand, chloroform can be distilled unchanged from aqueous potash. If, therefore, any formate is produced at the temperature employed, the rapidity and amount of the copper reduction would tend to negative the idea of its exercising any function whatsoever in the reaction, even intermediate or catalytic."

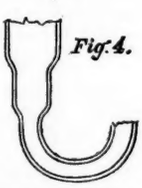
A NEW AND PRACTICAL THERMO-REGULATOR.

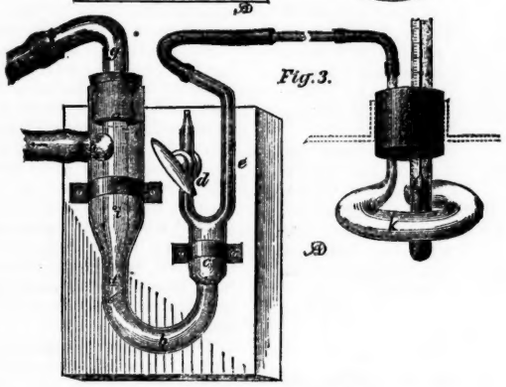
L. RUEGHEIMER describes a very efficient and practical thermo-regulator which has been used by him for a number of years in the laboratory of the University of Kiel.

The apparatus consists of a thick-walled glass tube *a*, *b*, *c*, of the shape shown in the cut. The expanded portion at *c* terminates in two branches, one of which contains the glass stop-cock *d*, while the other consists of a thick-walled tube *e*. At *h*, a lateral tube is fused upon *a*. The upper, wide-neck is closed with a tight stopper, through which passes a glass tube, which is connected, by rubber tubing, with the gas supply. The tube *h* leads to the burner, and the tube *e* is connected, by means of very stout and narrow-bored rubber tubing, with an empty glass vessel (a flask will answer, but the author seems to prefer the glass coil shown in the cut) situated within the hot-air chamber. Fig. 1 shows the principal part of the apparatus in section. Supposing the stop-cock *d* is opened, thereby establishing communication between the outer air and the interior of the air-expansion vessel *k*. If the supply of gas is turned on, it will enter at *g*, pass through the inner tube, and issue at the obliquely cut-off orifice *f* over the surface of a small quantity of mercury contained in the lower part of the U-tube. It will ascend in the interval between the two glass tubes *a* and *f*, and pass out through *h*, whence it will be led to the burner (not shown on the cut). As long as the stop-cock *d* is kept open, the apparatus will not affect the supply of gas in any way. When it is closed, however, the air expanding in the glass vessel cannot find its way any longer into the outer air, but will gradually depress the column of mercury in the limb *c*, until the orifice *f* in the other limb will be closed. The supply of gas would then cease entirely were it not for a small hole at *i* (in the inner tube), through which a sufficient quantity reaches the burner to prevent the flame from going out altogether. As soon as the temperature of the air-chamber falls a little, the mercury will recede from the orifice *f*, and the gas supply be re-established. The temperature at which the apparatus is to act may be regulated by pushing the inner tube *g*, *f* further up or down.









Rueghelmer's thermo-regulator.

As it is of some importance to preserve certain definite proportions between the different parts of the apparatus, the author appends specific directions.

The length of *p*, representing the pitch of the obliquely cut-off orifice *f*, ought to be equal to half the diameter of the tube at *n* (see Fig. 2). The diameter *m* of the outer tube *b* is to be selected so that the area of the passage between the inner and outer tube is as nearly as possible equal to the area of the bore *o* of the inner tube, so that the current of gas issuing from *f*, when this is uncovered by mercury, will pass between the tubes without alteration of pressure. The air-expansion vessel within the hot-air chamber should be chosen of as large a calibre as possible.

The particular apparatus described by the author consists of an air-bath for heating glass tubes closed by fusion. The air reservoir (*k*) has an internal capacity of about 350–360 C.c., and consists of a thin-walled glass tube bent in form of a ring, closed at one end by fusion, and terminating at the other in a thick-walled tube of not quite 1 millimeter bore. This is connected by a very strong rubber tube with the tube *e* of the same narrow bore. The tube *f* has a diameter of 5 millimeters at *o* (Fig. 2), and its walls are 0.75 millimeter thick. The tube *b* has a diameter *m* of 8½ millimeters.

If the temperature, in the beginning, after starting the apparatus, should rise too high, the stop-cock *d* is opened, and the supply of gas shut off altogether until the temperature has fallen sufficiently. Whenever the gas is turned off entirely, the stop-cock *d* must be opened to prevent the mercury from being aspirated towards the air reservoir.—After *Ber. d. Deutsch. Chem. Ges.*, 1887, 1,280.

A DAILY paper informed its readers that isinglass is obtained from the swimming bladder of a fish, and the principal use of which is to put in the doors of stoves.—*West. Drugg.*

Improvement of Dieterich's Method of Assaying Opium.

DIETERICH'S method of opium assay, published on page 6 of our last January number, has been critically examined by several competent authorities, who have acknowledged its merits and great advantages over those previously proposed, but have suggested certain improvements, which are calculated to make it still more exact. Mr. Eugene Dieterich, the author of the method, has now revised it in some minor details, and we give in the following the substance of his paper on the subject in the *Pharmaceutische Centralhalle* (No. 21):

The original process directed opium to be extracted with 10 parts of water, by maceration. It is based upon Flückiger's method, and is acknowledged to have yielded satisfactory results.

One of the principal questions that required to be decided was whether maceration could not be replaced by a shorter method of extraction. Besides, it was desired to ascertain whether other improvements, looking to a simplification of the method, could not be introduced.

A. Maceration.

A long-continued maceration, with occasional agitation, has been objected to, as it compelled the personal attendance of the operator at stated times, even during the night. For this reason, experiments were undertaken to find out whether *trituration* of the opium *in powder* would not accomplish the same thing. Comparative tests, made by both methods upon the same opium, have shown that the last-named method yields equally accurate results as the former. The trial tests were made with opium in rather coarse powder, which was thoroughly triturated in a mortar with water. As the results were so satisfactory, it follows that with opium, in *fine powder*, they must be at least equally good, and probably more uniformly obtainable.

B. The Strength of the Aqueous Solution of Opium, and its Effect upon the yield of Morphine.

This question was taken up in consequence of the author having noticed the following facts:

1. If a *concentrated* aqueous solution of a morphine salt is mixed with ammonia, pure morphine is *at once* separated as a precipitate in a microcrystalline condition.

2. If a dilute aqueous solution of a morphine salt, containing 1% of the latter, and therefore about representing the strength of an opium solution as directed by the author's method, is treated with much or little ammonia, the solution remains *clear*, and the morphine separates only gradually in a crystalline condition.

This peculiarity of morphine salts assists the author's method and permits, for the removal of narcotine, to employ a considerable excess of ammonia (up to 3 C.c. of normal ammonia,* so that the narcotine may be filtered off, before the morphine begins to crystallize.

It was next attempted to find out from what concentration of the opium solution the highest yield of morphine was obtained. A series of solutions were prepared, from 1 part of opium, with 5, 6, 7, 8 and 10 parts of water respectively, the same opium being, of course, used for this set of experiments. As a result it was found that the proportion : opium 1, water 5, yielded the largest amount of morphine, but the latter was much more impure in this and other concentrated solutions than in the more dilute ones. The brightest and clearest morphine was obtained from the proportions 1 : 8, and 1 : 10.

The following table shows the differences in yield from different concentrations:

Kinds of Opium.	Relation of Opium and Water.	Yield of Morphine. %	Difference.
I.....	1 : 8	12.42	0.31%
	1 : 10	12.11	
III.....	1 : 8	16.23	0.29%
	1 : 10	15.94	
IV.....	1 : 8	13.81	0.36%
	1 : 10	13.45	

* "Normal Ammonia" is the standard volumetric solution prepared by diluting 170 Gm. of Water of Ammonia of 10% with Distilled Water to 1,000 cubic centimeters.

When using the proportion 1 : 8, about 0.3% more of morphine was obtained, and this was even of a purer condition than that derived from a 1 : 10 solution. The proportion 1 : 8 was therefore adopted as preferable.

Upon the basis of these experiments mainly, the following improved method of assay has been proposed by Dieterich:

Improved Opium Assay.

I. *For Opium.*

Triturate 6 Gm. of the finely powdered opium in a mortar carefully with 6 Gm. of water, dilute and wash the mass with water into a suitable tared small flask, and add enough water to make the mixture weigh 54 Gm.

Macerate, with frequent stirring, during 1 hour, and then filter through a plaited filter of a diameter of 10 C.c.

Take 42 Gm. of the filtrate, mix it with 2 C.c. of normal ammonia, mix well, without strong agitation, and pass it at once through an already prepared plaited filter of 10 C.c. diameter.

36 Gm. of this filtrate, representing 4 Gm. of opium, are mixed in an exactly tared Erlenmeyer flask, by circular rotation, with 10 Gm. of ether; next 4 more C.c. of normal ammonia are added, the swinging or rotating motion continued until the liquid has become clear, the flask then corked and set aside.

After standing 5 or, at most, 6 hours, the ether layer is first transferred, as completely as possible, upon a plain filter of 8 C.c. diameter; then 10 C.c. more of ether are added to the contents of the flask, the whole again rotated and the ether layer again passed through the filter. When this has run through, the aqueous solution is poured in without having regard to the crystals which adhere to the walls of the flask. Finally, the latter, as well as the filter are washed with two successive portions of 5 C.c. each of water saturated with ether.

After the flask and filter have been allowed to drain well, both are dried at 100° C., the minute quantity of matter retained by the filter transferred to the flask, and the drying continued to a constant weight.

Note.—When the opium solution is mixed with the first portion (2 C.c.) of normal ammonia, it is recommended to avoid shaking, and subsequently, after the addition of ether and more ammonia, a rotating or swinging motion is recommended, both for the purpose of avoiding a foaming or emulsification of the mixture. During the filtration of the morphine, the use of ribbed funnels is advantageous, as the filtration is thereby much facilitated.

In calculating the quantity of solution corresponding to 4 Gm. of opium, Dieterich assumes that opium yields to water 60 parts of soluble matter; consequently, 6 Gm. of opium and 48 parts of water should yield 51.6 parts of aqueous solution; and, therefore, 34.4 Gm. would correspond to 4 Gm. of opium. After 42 Gm. of the solution had been mixed with 2 C.c. of normal ammonia, 36 Gm. of the mixture corresponded to 4 Gm. of opium.

II. *For Extract of Opium.*

Dissolve 3 Gm. of the extract in 40 Gm. of water; mix the solution without unnecessary agitation, with 2 C.c. of normal ammonia, and pass at once through a ready prepared plaited filter of 10 C.c. diameter.

30 C.c. of the filtrate, corresponding to 2 Gm. of the extract of opium, are then treated further, as directed under "I. *Opium.*"

III. *For Tinctures of Opium.*

50 Gm. of tincture of opium are evaporated in a tared capsule, upon a water bath, to 15 Gm.; this is diluted with water to weigh 38 Gm., 2 C.c. of normal ammonia added, the whole mixed by once agitating, and immediately passed through a ready prepared plaited filter of 10 C.c. diameter.

32 Gm. of the filtrate, corresponding to 40 Gm. of the tincture, are then further treated as directed under "I. *Opium.*"

C. Is it possible to extract the narcotine precipitated by ammonia, with ether, so as to avoid filtration?

Mr. Dieterich having ascertained the fact that the narcotine, freshly precipitated by ammonia, as described in the preceding method, was readily soluble in ether, he thought that this alkaloid could be removed by washing the solution with ether, thus saving one filtration. Of course, there was a probability that the ether would also dissolve a small amount of the morphine, already set free and still in solution. Yet this morphine would again crystallize from the ethereal solution, though, of course, in a very impure state.

Experiments showed that the surmise was correct. A solution of opium, shaken with an equal volume of ether, becomes indeed turbid when mixed with ammonia, but becomes clear again on strong shaking, so that the separation of morphine from the resulting mixture proceeded in a normal manner.

The author, therefore, proposes, alongside of his *improved method*, the following

Simplified Assay of Opium.

I. *For Opium.*

Triturate 5 Gm. of finely powdered opium in a mortar, carefully, with 5 Gm. of water, dilute and wash the mass with water into a small glass flask until it amounts to 45 Gm.

Macerate, with occasional stirring, for 1 hour, and filter through a plaited filter of 10 C.c. diameter.

To 34.4 C.c. of the filtrate, corresponding to 4 Gm. of opium, add 20 Gm. of ether, shake strongly and then add 2 C.c. of normal ammonia, continuing the strong shaking, until the separated narcotine has been dissolved by the ether.

When the liquid is clear, add 3 more C.c. of normal ammonia; shake well and set the flask aside.

After 5 or, at the most, 6 hours, filter the morphine in the manner directed under the "improved method."

Note.—After the addition of the second portion of normal ammonia, the two layers of liquid are apt to form an emulsion, but on standing they readily separate. The emulsion is no obstacle to the separation of morphine.

Whatever morphine has been set free and dissolved by the ether crystallizes from it again, all but mere traces.

II. *For Extract of Opium.*

Dissolve 2.5 Gm. of the extract in 35 Gm. of water, macerate during 1 hour, and filter through a plaited filter of 8 C.c. diameter.

To 30 Gm. of this filtrate, corresponding to 2 Gm. of the extract, add 20 Gm. of ether, and then two successive portions, of 2 C.c. each, of normal ammonia, precisely as directed in the preceding paragraph.

III. *For Tinctures of Opium.*

Evaporate 50 Gm. of Tincture of Opium in a tared capsule, on the water-bath, to 15 Gm., dilute with water to 40 Gm. and filter.

To 32 Gm. of the filtrate, corresponding to 40 Gm. of the tincture, add 20 Gm. of ether, and two successive portions, of 2 C.c. each, of normal ammonia, proceding in the same manner as previously directed.

Mr. Dieterich appends analytical figures, to show how far the several methods may be considered as trustworthy.

From these figures it appears that the "*improved method*" yielded from a certain kind of opium a quantity of morphine varying between 13.70 and 14.15 per cent. The "*simplified method*" applied to the same opium yielded between 13.70 and 13.95 per cent. The morphine obtained by the former method yielded to ether 1.0 to 1.6 per cent of soluble matter, that obtained by the second method 1.0 to 1.8 per cent. In both cases the morphine was free from calcium. The only material difference in the results is this, that the morphine obtained by the "*simplified process*" is in fine crystals (owing to the shaking), instead of in a handsome, well-developed crystals like that furnished by the other.

The author points out that it is of comparatively little importance whether more or less of an excess of ether is added when the narcotine is to be removed in the "improved process." But, when the first portion of ammonia has been added, it is necessary to filter at once, to prevent a separation of morphine.

Alleged Evil Effects of Indian Hemp Corn Cure.

THE well-known combination of extract of cannabis indica, salicylic acid, and collodium has been used for a number of years with very good success, and without any evil effects so far as known. In a recent number of the *Rundschau* (Prag), Edmund Campe relates his experience with this application, which had very serious consequences, at least according to the report. The physicians who were summoned declared the patient to have contracted blood-poisoning through the cannabis indica (!). The swelling and pain appear to have been excruciating, and the patient was kept nine weeks on his back.

By way of comment, the reporter adds that "it is therefore evident that cannabis indica may cause blood-poisoning not only through an open wound, but may do so also, as in his case, through a thin new membrane or skin, etc."

On our part, we cannot help thinking that the blood-poisoning must have been caused, under the circumstances, by something else.

Narceine.

LABORDE has been studying, for the last few months, the action of a new narceine. The Paris correspondent of the *Lancet* states that the preparation of this substance is extremely difficult, and that found in the trade contains a large proportion of other alkaloids of opium. M. Duquesnel has succeeded in obtaining narceine containing only a small quantity of laudanine and codeine, and, from numerous trials upon animals and upon man, M. Laborde states that this product has a happy sedative effect upon the nervous centres, and is an admirable medicine for whooping-cough and bronchitis, an opinion which is shared by M. Brown-Séquard.—*Chem. and Drugg.*

Butter Testing.

DR. H. HAGER recommends the Reichert-Meissl method of examining butter, the chief feature of which is a determination of the *volatile fatty acids*. The method is simpler and more expeditious than Hehner's. The butter is filtered and five grains are saponified with pure sodium hydroxide (two grammes) in presence of alcohol (80 per cent). The volatile fatty acids are separated by decomposition with sulphuric acid and distillation, and estimated by titrating the distillate with decinormal alkali. The following table gives the number of C.c. of the latter required to neutralize the distillate in the case of certain typical fats:

Normal butter	26 to 31 C.c.
Oleomargarine	1.9 "
Cacao butter	7.4 "
Lard	0.6 "

—*Chem. Centralbl.* and *Journ. Chem. Soc.*

The Manufacture of Cachets and Wafers.

THE recent death of Limousin, the inventor of the wafer-capsules (cachets, capsulæ amylaceæ), suggests the idea of again drawing attention to the utility of this form of medication.

In recent times, the development of the wafer-capsule industry, if it may be so called, has been especially promoted by Mr. Adolph Vomacka, of Prag, whose special apparatus has been illustrated by us on page 221 of our volume for 1885.

While it would be an unprofitable undertaking for every dispensing pharmacist to undertake the preparation of his own wafers, it is believed that a profitable business could be carried on by at least one, or perhaps even more, manufacturers in each country. To a certain extent, the choice of this form of medication depends somewhat upon the rate with which its existence or availability is kept before the memory of the prescriber. It only needs a slight impetus, from time to time, to cause a preference in favor of the wafer-capsule over some other forms of medication, though it is by no means intended to assert that this is in all cases the best form. We believe, however, that it is, for instance, preferable to gelatin capsules, in the case of quinine.

Formerly, the wafer-capsules were pressed from the large square wafers (for which Nuremberg has long been celebrated); at the present time, however, they are baked specially. The cost of fitting up a factory is very small, and the arrangements required are simple, requiring but little room and only cheap labor. The most expensive item of the whole are the forms. These are made of two hinged pieces, the material being either steel or brass. One of the plates contains the concave, the other the convex pattern of the wafers.

These forms rest upon one or more specially constructed ovens heated either by gas or wood-charcoal. As soon as the opened forms, resting on the hot oven, have acquired the proper temperature, which is easily recognized by allowing a drop of water to fall upon them, a certain quantity of a mass prepared from wheat-starch is spread upon one of the plates and the other plate gradually folded over it. The latter, through its own weight, expands the mass so that it forms a perfectly uniform layer. The excess of the mass, which is squeezed out at the side, is simply scratched off. The forms are then opened, and the completely baked sheet taken out. This sheet contains as many half wafer-capsules as there are patterns. When freshly taken from the form, these sheets are very brittle, but after being laid aside a few days, they absorb enough moisture from the air to permit being cut or trimmed. The next operation then is the cutting or punching out of the round wafers. For this purpose there are used either simply punches, or punching machines worked by treadles, by means of which each separate wafer is cut out. These are then counted and put up in packages. A well trained girl is able to bake, in one day, 20,000 such wafers, and it requires the service of only two girls to punch these.

The mass of which the wafers are composed consists of the purest wheat-starch, mixed with water. The best fuel is either gas or wood charcoal. There being only a few requisites, it will be easy to calculate the cost of a day's turn out.

The whole art and mystery of the manufacture centres in the forms, which must be absolutely true and perfect. If the forms are not exactly true, the wafers will be uneven. The least defect of the forms will be prominently visible upon the product.*

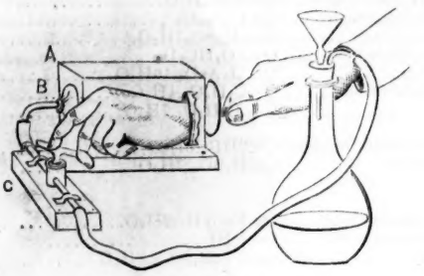
The preparation of flat wafers, such as are used for making sealing wafers, sacramental wafers, wafer-bottoms for ginger-cake, etc., is much more simple than that of the medicinal wafers. The former are baked in similar metallic forms, which are, however, entirely smooth inside. The thickness of the wafers depends, of course, upon the distance intervening between the plates when they are closed.

* Mr. Adolf Vomacka, of Prague, Austria (Brenntegasse 13), makes a specialty, not only of the capsuling apparatus, but also of the forms required to make the wafers themselves. Intending purchasers will do well to communicate with him.

A SIMPLE QUICK-FILTERING APPARATUS.

THE accompanying cut represents a quick-filtering apparatus, devised by the writer some four or five years ago, and which, in the absence of a head of water, answers fully all the purposes of the Bunsen pump. B is an ordinary hard-rubber syringe, five inches long, fixed in a block, A (which is a piece of pump stock with a bore to suit the diameter of the syringe and screwed to the table); and C is a three-way stop-cock worked with the left hand, while the right hand works the piston of the syringe.

The idea was suggested by the text of Fleischer's Volumetric Analysis, Muir's translation, pp. 28 and 29, and the translators, p. 269, where devices inferior to this are described.—WOODVILLE LATHAM in *Am. Chem. Journ.*



Latham's quick-filtering apparatus.

SOME NEW FORMS OF APPARATUS.

E. POLLACK describes the following simple modifications of laboratory utensils:

Fig. 1 represents a dropping funnel, having a hollow stopper extending to a tube, and a small inlet-tube attached to the neck of the funnel, which can be made to communicate with the bore of the stopper so as to admit the air. If the stop-cock below is opened, and the stopper suitably turned, the contents of the funnel may be made to escape at any desired rate of slowness. The air to be admitted into the funnel may first be passed through wash- or drying-bottles, or some indifferent gas may be admitted in place of it.

FIG. 2.

Fig. 2 represents a flat funnel made of cryolite or black glass. It is intended for introducing powders into flasks or other apparatus, for which purpose glazed paper has generally been used. The expanded neck prevents chocking of the latter.

Fig. 3 shows the construction of a new condenser, in which the jet of cold water is made to impinge upon the hottest part of the interior, thereby insuring the most effective cooling of the vapors.—*Rep. d. anal. Chem.*, 1887, 287.

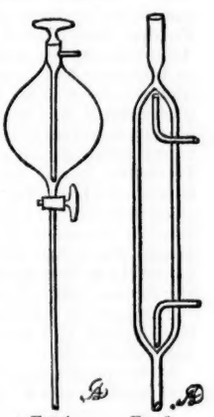


FIG. 1. FIG. 3.

Liquid Paraffin as a Reagent.

THIS substance dissolves in all proportions in alcohol and ether, which is rendered turbid by the smallest quantity of water or aqueous alcohol. Absolute alcohol takes up only a certain quantity of paraffin oil, and if brought in contact with a larger quantity of paraffin, two clear liquids separate out—pure paraffin oil and a saturated solution of it in the alcohol. If a small quantity of aqueous alcohol is brought in contact with the latter, an immediate turbidity is produced. If 20 C.c. of chloroform or absolute alcohol are mixed with 0.04 C.c. of a 50 per cent alcohol, and a few drops of paraffin oil are added, a distinct turbidity appears. The author finds, further, that paraffin oil freely dissolves chlorine, iodine, and bromine.—L. CRISMER, quoted in *Scient. Am.*

Knodalin is a mixture recommended by C. Barenthin for the purpose of killing parasites and insects upon plants. It is a reddish-brown, oily, alkaline liquid, having a strong odor of amylic alcohol, and is prepared from:

Nitrobenzol	2 to 3 parts
Xanthogenate of Potassium	10 "
Potash-Soap, containing 60% water	400 "
Amylic Alcohol	600 "

[Xanthogenate of potassium is formed when bisulphide of carbon is treated with alcoholic solution of potassa. It is a salt in which the bisulphide appears to be *added* to the alcoholate of potassium: $C_2H_5OK.CS_2$. This salt and other xanthogenates have previously been already proposed as destroyers of plant insects.]

Therapeutic Equivalents of the Salts of Quinine.

Salt of Quinine.	Formula	% of Alkaloids.	Solubility of 1 part in water at 15°	1 gramme of water dissolves	Required to give 1 gramme of anhydrous quinine.	Pharmacopœias in which they are official.
Hydrate	Qu.*$3H_2O$	85.72	16.70	0.00059	1.16	France, Belgium, Spain, United States, Rome, Sweden.
Acetate	Qu.$C_2H_4O_2$	84.37	Slight	....	1.18	Spain.
Chlorhydrate (basic)	Qu.HCl.$2H_2O$	81.71	21.40	0.046	1.23	France, Germany, Austria, Belgium, Denmark, Spain, United States, Holland, Hungary, Norway, Rome, Russia, Sweden, Switzerland.
Lactate (basic)	Qu.$C_3H_6O_3$	78.26	10.29	0.097	1.27	France, Switzerland.
Bromhydrate (basic)	Qu.HBr.H_2O	76.60	45.02	0.022	1.30	France, United States.
Valerianate (basic)	Qu.$C_5H_{10}O_2$	76.06	33.70	0.029	1.31	France, Germany, Belgium, Spain.
Sulphate (basic)	$Qu_2.H_2SO_4.7H_2O$	74.31	5.81	0.0017	1.34	All pharmacopœias.
Sulphovinate (neutral)	Qu.$SO_4HC_2H_5$	71.20	3.30	0.303	1.39	In no official pharmacopœias.
Arseniate	Qu.$H_3AsO_4.16H_2O$	69.38	Slight	....	1.44	Greece, Russia, Switzerland.
Salicylate (basic)	Qu.$C_7H_6O_3.\frac{1}{2}H_2O$	68.79	8.63	0.0011	1.45	France, Russia.
Citrate	$Qu_3.C_6H_8O_7.7H_2O$	67.08	8.20	0.0012	1.49	Belgium, Greece, Holland, Russia, Switzerland.
Bromhydrate (neutral)	Qu.2HBr.$3H_2O$	60.67	6.31	0.158	1.64	France.
Bisulphate	Qu.$H_2SO_4.7H_2O$	59.12	8.81	0.113	1.69	France, Germany, Austria, Spain, United States, Greece, Hungary, Rome, Switzerland.
Ferrocyanhydrate	Qu.$FeCyH_4.2H_2O$	56.25	Slight	....	1.77	France, Belgium.
Iodhydrate (acid)	Qu.I.HI	55.95	....	....	1.78	Greece.
Tannate	Qu.$(C_{14}H_{10}O_9)_8.8H_2O$	22.60	8.00	0.0012	4.42	France, Germany, Austria, Belgium, Greece, Holland, Italy, Russia, Switzerland.

* For perspicuity's space, the abbreviation "Qu." has been put in place of the formula for quinine: $C_{20}H_{24}N_2O_2$.

—After M. BOYMOND, in *Bulletin Therap.*

The Iodine Convention.

AT the commencement of the present year, the price of iodine, which has for some time been very low, and was expected to experience a further decline in consequence of the anticipated collapse of the combination of producers, suddenly, and to the astonishment of many dealers in the article, rose to 9*d.* per oz. The convention of the producers of iodine had been renewed, but the parties interested in it wisely kept their own counsel, and were enabled to reap a substantial benefit as the reward of their discretion. The new convention, to which most, if not all, of the manufacturers and the principal holders of stocks in Europe, the United States, and the west coast of South America have acceeded, was registered on February 18th, at Iquique—the principal port of shipment in the iodine district—now held by the Chilians. The agreement, we understand, has been concluded for a term of three years, commencing on January 1st, 1887, and it has been resolved that during this period the sale of the entire product will be vested in one exclusively. The European manufacturers are to have for their share 40¼ per cent of the total sales effected, so long as the latter do not exceed 336,000 lbs. If the sales of iodine exceed that quantity—which means about ten months' consumption, and is, therefore, probably to be taken as an annual limit—90 per cent of the excess will fall to the share of the Chilian producers.

The parties interested in the convention, in addition to the English and French producers, are divided into three categories, viz.:

Firms possessing iodine manufactories in working order and holding stock in Europe.

New manufacturers, carrying no stock in Europe.

Owners of iodine holding stock in Europe, who are not at the same time manufacturers of the article in South America.

The parties falling under the first category will be compelled, under the terms of the agreement, to suspend the manufacture of iodine until their surplus stocks have been cleared off by their share of monthly allotments of sales effected. It is said that some firms hold enough stock in Europe to require two and a half or three years before, under this system, they will be allowed to resume working, and if the estimate of the European stock owned by Chilian holders is correct, this clause will apparently be tantamount to a virtual cessation of iodine production in the old Chilian works during the terms of the convention.

The new producers of iodine, forming the second class of contracting parties, have their output strictly limited to the quantity assigned to them as their monthly share of the orders. Firms who hold stock in Europe, but who do not possess works in South America, have to submit to a fixed reduction on the amount of their monthly share of the sales, in order to recoup the producers for the compulsory limitation or temporary cessation of their output. The producing capacity of all works included in the convention will be estimated, and the share of each contracting party in the orders is to be fixed according to the relation between the producing capacity of his work and his estimated annual consumption. To commence on January 1st, 1887, the price for iodine for metallurgical and dyeing purposes is fixed at 6*d.* per oz., and for all other, including pharmaceutical uses, at 9*d* per oz.

The aggregate capacity of production of sublimed iodine of not less than 98 per cent standard in the South American works at the end of last year was estimated at 25,560 quintals, or 2,594,340 lbs; the European stock of Chilian iodine at 10,177 quintals, or 1,032,965 lbs.; the export of iodine from the South American west coast in 1886 at 3,825.88 quintals, or 388,327 lbs.; and the world's consumption at 4,000 quintals, or 406,000 lbs. These figures would prove that Chili is at present capable of producing six and a half times as much iodine as is required for all purposes to which the article is applied, and it must not be forgotten that there is at present no prospect of any considerable extension in the use of the article, even though the price should fall to a third or a fourth of that prevailing. The stock of Chilian iodine now held in Europe would alone suffice for two and a half years' consumption, and the convention must therefore necessarily restrict the output of iodine in South American to a very small fraction indeed of the present producing capacity. The directors of the iodine association purpose, it is said, to gradually raise the price considerably beyond their present quotation, and as they control the market at this moment they will probably succeed. But the combination is likely sooner or later to come to grief through the impatience of its own members to submit to an artificial stunting of their producing powers, nor could the collapse of an association based upon principles so essentially vicious from an economical point of view be regretted, however disadvantageous it might be to its own component parts.—*Chem. and Drugg.*, June 18th, 1887.

The Influence of Alcohol upon Digestion.

C. A. GLUZINSKI has studied the effect of the presence of alcohol in the human stomach, upon the process of digestion. The experiments were made upon a man to whom, at certain periods, the coagulated albumen of one egg, together with a measured quantity of water, was administered. At regular intervals, the contents of the stomach were aspirated by means of Jaworski's aspirator, and the experiments continued daily, with the modification that the periods between the several aspirations were gradually lengthened, until the removed gastric contents were completely free from albumen. In the first series of experiments, only albumen and water were given; in the next series, equal quantities of a 25 or 50 or 75% alcohol or of brandy were given in addition.

The influence of the alcohol exhibited itself in two clearly distinguishable stadia. As long as alcohol was present in the stomach, the digestion was greatly retarded. But when the alcohol had disappeared, which usually required only a short time (½ to 1 hour), the rate of acidity of the stomach took a sudden increase to 2 or 3 times the buantity found when no alcohol had been given. From this point on, the digestion then proceeded much more rapidly, and was sooner terminated in spite of the initial retardation. It follows from these observations, says the author, that a moderate quantity of alcohol, taken a short time previous to a meal, exercises a beneficial effect upon the digestion. Larger quantities obstruct the mechanical function of the stomach, and certainly retard digestion. —*Arch. f. Klin. Med.* and *Chem. Centralh*, No. 24.

Castoria, according to the "*Deutsch Am. Apothek. Zeit.*," is a mixture of senna, pumpkin seed, anise, levant wormseed, Rochelle salt, sodium bicarbonate, sugar, oil gaultheria, oil peppermint, and water.

RAPID ESTIMATION OF CHLORIDE OF LIME.

CHLORIDE of lime or any other compound containing available chlorine (such as hypochlorites, etc.) may be rapidly assayed in the following manner by means of Lunge's nitrometer (see next column).

Fill the tube *d* with mercury up to the mark 0, the three-way stop-cock *b* being turned so that communication is established with the outer air. Dissolve or mix 10 Gm. of the chloride of lime with water to make 250 C.c., and having rendered the mixture uniform by agitation, transfer 5 C.c. of it (corresponding to 0.2 Gm. of chloride of lime) to the little tube *f* in the flask *h*. Into the flask itself pour about 2 C.c. of commercial 10% peroxide of hydrogen. If the latter is not 10%, a larger amount must be added. In fact, it is absolutely necessary that it be in excess, but it is not necessary that its exact strength or quantity be determined, because only so much of it enters the reaction as is equivalent to the available chlorine. Then connect the flask *h* with the three-way stop-cock, and turn the latter so that it will communicate with the flask. Having made sure that the mercury still stands at 0, or having, if necessary, adjusted it at this point again, the tube *d* is lowered (both being clamped on an upright support not shown in the cut) to rarefy the air over the mercury. The flask is then grasped at the neck (care being taken that it be not warmed by the hand) and the two liquids caused to mingle by inclining the flask. Gas will then be given off which will depress the mercury. When no more is eliminated, the mercury in both legs is made to stand at the same level, and the degrees read off. If 0.2 Gm. of chloride of calcium was used, then each 1 C.c. of gas, corrected for 0° C. and 760 Mm. pressure, corresponds to 1.632 per cent, by weight, of available chlorine, that is, to "5 degrees French." If 7.917 Gm. of chloride of calcium were dissolved in 250 C.c. of water, and 5 C.c. of this used for each test, then each 1 C.c. of gas corresponds to 2 per cent of chlorine.

Aniline Camphorate.

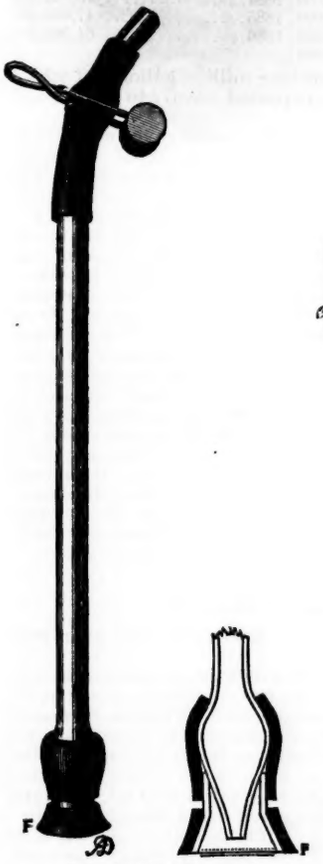
REFERRING to the fact that the recent discovery of antipyretic properties in acetanlide ("antifebrin") has opened up a possible future in therapeutics for another group of compounds, aniline derivatives and salts, Vulpius points out that a compound of aniline and camphoric acid had previously been credited by Tomaselli with antispasmodic properties. This salt does not usually figure in trade lists, but Hager, in his *Handbuch der pharmaceutischen Praxis* (vol. i., p. 364), states that it can be prepared by dissolving 50 parts of camphoric acid ($C_{10}H_{16}O_4$) in 150 parts of absolute alcohol, and adding to the solution 56 parts of aniline, or sufficient to produce a neutral liquid, which is then left to evaporate spontaneously in a dark place. The product so obtained is described as occurring in small white or reddish odorless prisms, having a pungent acrid taste and easily soluble in water, alcohol, and ether. This formula is objected to by Vulpius on the ground that excess of aniline is ordered, and that it is difficult to ascertain the exact point of neutralization with the ordinary indicators, paper stained with the violet coloring matter of dahlia petals, which is colored green by aniline, being the most convenient. Moreover, he considers the use of alcohol as unnecessary, and liable to lead to discoloration during the evaporation, even in the dark. He prefers to heat together in a closed vessel, at the temperature of a boiling water-bath, 100 parts of finely-powdered camphoric acid and 93 parts of aniline. The crystallization of the aniline camphorate is said to commence in a few minutes, but to take some time to complete, though its progress is accelerated by contact with a wide surface of the containing vessel. Aniline camphorate—$(C_6H_7N)_2.C_{10}H_{16}O_4$—thus prepared, is said to dissolve in alcohol and ether, but not freely in water, of which it requires about 30 parts, and in its solubilities generally it approximates to aniline rather than to camphoric acid. Chloroform and carbon bisulphide appear to break up the compound, taking up the aniline and leaving a residue of camphoric acid; heated fatty oils and oil of turpentine behave more or less similarly. Apart from the alcoholic and ethereal solutions, which are not adapted for hypodermic use, the best solvent for aniline camphorate is glycerin, which takes up one-tenth of its weight, and can then be diluted with an equal weight of water. The maximum single dose of aniline camphorate given by Tomaselli as an antispasmodic was 0.2 gramme, and the maximum quantity administered in one day 0.8 gramme, which was usually given dissolved in four volumes of ether or ether-alcohol, and inclosed in a gelatin capsule. —*Pharm. Journ.*

AN amusing yet instructive incident in the life of the cutter was related to us recently. It was a prominent druggist of this city, who offended his competitor by selling St. Jacob's oil at 40 cents per bottle. To get even, the latter gentleman advertised the oil at 25 cents. Druggist No. 1 had an eye to business, and gave each boy who entered the store a "quarter," and sent them for the oil. As a result, he stocked up at a low figure, and at his competitor's expense. We will leave the moral to be drawn by our readers.—*Western Druggist.*

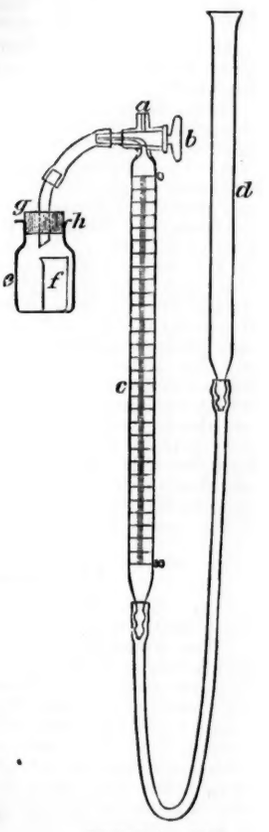
MODIFIED FORM OF FILTER FOR USE WITH MAYER'S REAGENT.

A PIECE of glass tubing of about three-sixteenths in bore is heated and compressed near one end until its diameter is increased by about one-half; the enlarged portion is then drawn out to a point like a pipette. The other end is fitted with a piece of stout rubber tubing, a burette clamp, and a short glass tube to serve as a mouthpiece. One end of another piece of glass tubing is then enlarged to the shape of a small funnel, and cut off at about three-quarters of an inch from the enlarged end. A circle of the filtering medium, consisting of thick filtering paper placed between two pieces of fine muslin, is placed over the mouth of the funnel, turned down all round, and secured in position by slipping over the whole a piece of stout rubber tubing three-eighths of an inch in length. To the stem of the funnel another piece of rubber tubing is cemented, leaving about three-quarters of an inch projecting, and the pipette portion having been inserted into this the instrument is complete.

Before use, the filtering medium must be prepared by mixing a little finely powdered French chalk with water, and having immersed in the mixture the end (F) of the



Filter for Mayer's reagent.



Lunge's nitrometer.

filter tube, sucking at the mouth-piece until the filtrate passes through perfectly clear. When, however, a liquid containing a Mayer's precipitate is being filtered, it will be found that considerable force is required to draw the liquor through, and the operation becomes very fatiguing. The clamp is intended to obviate this, for having sucked the air out of the tube as completely as possible, the clamp is closed, and the liquid gradually rises of its own accord into the vacuum existing inside the tube. The pipette may then be disconnected from the filter, and by compressing the rubber tubing between the finger and thumb at the point between the clamp and the top of the long glass tube, a drop of the clear filtrate may be forced out into a watch glass, and tested with a drop of Mayer's reagent; then by opening the clamp, the remainder of the liquid flows back into the bulk which is being estimated.

It is always advisable that the liquid filter into the pipette to the height of 2 or 3 inches, so that all traces of the preceding filtrate may be washed through, and a representative sample obtained.

The volumetric estimation of alkaloids by Mayer's reagent is generally a very tedious operation, owing to the large amount of time which is consumed in waiting for the finely-divided precipitates to subside, but by the use of the filter tube an analysis can be performed with comparative rapidity; and it is probable that in other estimations involving a similar difficulty, such as the titration of lead salts with oxalic acid, etc., this simple instrument would be found of service.—F. C. J. BIRD, *in Pharm. Jour. and Trans.*

Olive Oil in Southern Europe.

In Italy about two and a quarter million acres of land are under olive cultivation, yielding, if the crop is good throughout the country, about eighty-nine and a half million gallons of oil, thus apportioned:

	Gallons.		Gallons.
Riviera to Massa Carrara	9,100,000	Neapolitan provinces on the Adriatic, exclusive of Bari.	14,900,000
Lombardy, Venetia, Emilia and the Marches	2,200,000	Neapolitan provinces on the Mediterranean	16,800,000
Tuscany	7,500,000	Sicily	19,300,000
Umbria and Latium.	6,300,000	Sardinia	5,600,000
Bari	7,800,000		

The Neapolitan provinces and Sicily, though yielding the largest crop, produce oil of low quality. The finer qualities of olive oil are produced in the districts of Bari, on the southeast shore of the Adriatic, Umbria, in Central Italy, Tuscany and Liguria, the latter including the districts of Genoa and Porto Maurizio—the Riviera, it is generally called.

In practice, a crop of 89,500,000 gallons is seldom obtained, and the following are the official returns of the production during the last seven years:

	Gallons.		Gallons.
1880	86,000,000	1884	46,800,000
1881	34,600,000	1885	47,000,000
1882	56,800,000	1886	64,300,000
1883	41,300,000		

An average of about fifty-four million gallons, of which about twenty millions are exported, mostly to France and England.

Spain, as an olive oil producing country, comes next in importance to Italy, though a long way behind; while the yield of France is very small as compared with Italy. The chief olive oil producing districts of France are Nice and Provence (Alpes-Maritimes, Bouches-du-Rhone, and Var); the produce of Provence being frequently called Aix oil. Oil from Nice resembles the produce of the adjacent district of the Riviera, and is superior to the oil of Provence or Aix, which latter is pressed chiefly from olives resembling the wild variety. The olive oils exported from France are mostly of Italian origin. France imports some five or six million gallons a year of Italian olive oil; her own production being small and quite inadequate to supply the home market. Although the chief demand in France is for oils of the districts of Bari and the Riviera, which are much cheaper than those of Tuscany, buyers are also in the habit of going from Aix to Tuscany every year to make purchases of oil of that region. It appears that the bulk of the olive oils exported from Bordeaux are derived from south-eastern France, and the country surrounding Genoa, and are respectively known as "huile d'Aix" and "huile de Nice."—*Chem. and Drugg.*

Adulteration of Olive Oil.

In a report of the trade of Leghorn for the year 1886, Mr. Consul Inglis says:

"The exportation of adulterated oil, in what are commonly known as Florence flasks, continues, and has, indeed, received a fresh development. Whereas, formerly, the practice of certain firms was to put in these flasks the lowest quality of olive oil (not produced in Tuscany, but coming from other districts, such as the Romagna) mixed with cotton-seed oil, of late, the cotton-seed oil, pure and simple, has been sent, the cases being branded 'Olive oil' of superlative quality. But as cotton-seed oil is to be had cheaper in England than in Italy, things have culminated, logically enough, in exporting the empty flasks, packed in the usual cases, to London, there to be filled with cotton-seed oil, and, of course, palmed off upon the public as 'olive oil' of fine quality. The reason for this state of things is not far to seek. At one time, really pure and good olive oil was exported in these flasks, but over-competition and the beating down of prices by importers in England—who, be it said, care nothing about quality and insist only on low prices—led at first to inferior olive oil being substituted, and next to adulteration with cotton-seed oil, not to mention short measure in the flasks. Neither the flasks nor the cases in which they are packed have at any time borne the brand of the exporter, this not being allowed by the importers, as prejudicial to their particular interests; hence, it followed that the best firms in the Leghorn export trade have stood exactly on the same level with the English public as the firms who resort to the practice described above, both being alike unknown to the English consumer.

"The result is now apparent. The Florence flask trade—a specialty of Leghorn, these flasks not being procurable out of Tuscany—is utterly discredited, and has been totally abandoned by the leading firms engaged in the export trade in olive oil, who refuse to lend themselves to such discreditable practices. Therefore, persons buying oil in Florence flasks may know what to expect now.

"It is not an easy matter to get the genuine Lucca oil of fine quality in England; the demand is chiefly for cheap oil, the ignorance of the public being traded upon to a great extent. If the public wish to get Tuscan or Lucca oil, as it is generally termed, pure and of the best quality, they must look to the standing and reputation of the firm by whom the oil has been imported and bottled, and whose brand can be considered a sufficient guarantee, since, unfortunately, the leading firms in the export trade from Tuscany are unknown to the public in England. Failing these precautions, they will probably get rubbish."—*Pharmaceutical Journal.*

Note on the Kola Nut.

The value of the kola nut, as a bearer of the waste-retarding properties of caffeine, has alredy been recognized, and it is no doubt destined to play an important rôle, as a remedial agent, in the future. It is, however, only of late years that its value has been appreciated by the medical profession. In its own home, in the tropical portions of Africa, it has been held in the highest esteem for centuries. We owe to several of the modern African explorers interesting accounts of the economic uses of the nut. One of the most detailed is that by the lamented Dr. Gustav Nachtigall, from whose work, "Saharâ und Sûdân" (Berlin, vol. I., 666) we abstract the following:

The Gûro-nut [or kola nut] is the seed-kernel of a *Sterculia* (mostly *Sterculia acuminata*), having the average size of a rather large horse-chestnut, and looking somewhat like it. Yet it is not enveloped, like the latter, by a detachable shell, but it appears as a homogeneous, hard mass, externally of a brown, and internally of a yellowish-white to rose-red color. It occurs in the western portion of northern tropical Africa from the Senegal to the Niger, and in the Binuë countries, and throughout the equatorial region. Its different varieties, however, are very differently estimated. Those which are alone esteemed in the Haussa districts and in Bornû come from the region of the Niger. It is said that the commercial exportation of the best quality which grows in Nîfe, and is known under the name labôdschi, is forbidden by the laws of the land under heavy penalty, the king alone having the right to give it away as a present. The kernels of the better kind consist of two halves, which are closely adherent. A criterion of their quality is this, that the inner surfaces of the two halves, as well as the interior, should have as pronounced a rose-red color as possible, and that they should have a faintly bitter, but no insipid mucilaginous taste, such as is exhibited by those which come from Adamâwa, south of Binuë, which have a yellowish-white color interiorly, and often may be naturally split into three portions. The inferior sorts also appear to contain a smaller quantity of the exciting and appetizing principle [chiefly caffeine] which has induced the Arabs to designate the gûro nut as *qahua es-Sûdân* or "Sudan Coffee."

I became rapidly so much accustomed to this stimulant, which never affected my organs of digestion or my nervous system injuriously, that I missed it more than coffee, tea, or tobacco, when it could not be obtained. It is true that, even in a cheap country like Bornû, its consumption is more expensive than that of coffee, as the custom of the country requires to hand to a visiting guest a whole, or at least half a gûro nut, just as a cup of coffee is placed before a guest in Arabic countries. But it takes many cups of coffee to equalize in value a gûro nut. Of the latter, 100 are usually purchased, which cost (in Bornû) according to their size, quality, and the state of the market, between 8 and 50 marks [about 2 to 12 dollars]. The large nuts, which have sometimes a diameter of 1½ to 2 inches, are much better than the smaller ones, and are much more expensive in proportion. As the gûro nut is collected in immense quantities, it would cost much less, in spite of the long journey from its place of growth to Bornû, if its transport and treatment were not so difficult and uncertain. Not every one is able to travel beyond the Niger to Gondscha for the purpose of fetching gûro nuts. Such an undertaking requires great care and experience. This sensitive nut requires a certain amount of moisture and cool temperature, but cannot bear either an excess of water or dry heat. The merchants pack them in large baskets of dûm-mats (made from the leaves of the dûm palm), which are first padded with a thick layer of large, moistened leaves. On top of the nuts a similar layer is laid, and the whole package strongly bound in all directions with ropes. The larger the number of fruit, the less risk is there in transportation. If several thousand are packed together, it is sufficient, during the rainy season, to open the baskets every fortnight, to spread out the nuts to expose them for a short time to the fresh air, then to dampen them as well as the packing. If only a few hundred are packed together, this process must be repeated several times a week. During the hot season they are much liable to spoil. On opening the baskets, they must be carefully examined, so as to eliminate damaged ones, which might infect others. If they have only become flaccid, they may generally be again rendered hard and firm by placing them for a short time in water. But when they show whitish spots on their surface, the affected nuts must be thrown away. Sometimes they show yellowish-brown spots, and are then affected by a disease called *hille* (so called from *el-hinnâ*, used for dyeing), which renders the interior pale white and entirely tasteless, completely ruining the fruit. If the seeds are kept too damp the surface acquires dark spots and the interior becomes hard and insipid. This and still

other diseases or stages of decay are distinguished by special names.

The correct treatment of the gûro nut is so difficult that the people, in their search after rational explanations of the frequent mishaps, seek them in supernatural influences.

Owing to the difficulty to preserve the sensitive fruit during its transport through the hot and dry air of the Great Desert, they seldom arrive in a fresh condition in the northern countries of Africa. In the Sûdân it is even used in a dry condition, but only by the poorest class of the population, who call it *kauda*.

For the people of Haussa and Bornû, the gûro nut has become even a more an indispensable article of consumption than coffee or tea for other people. Whenever a short crop, or warlike conditions in the neighborhood diminish the supply, this is considered a great calamity. Every sacrifice is made to obtain the favorite luxury, when it has been inaccessible for some time. A Kanûri, for instance, will sell his favorite horse or female slave for this purpose. A gift of gûro nuts is always regarded as a token of especial friendship.

Analysis of Commercial Extracts of Beef and Bouillon Extracts.

THE quality of an extract of beef may generally be determined from the amount of water, ash, and proportion of matters soluble in eighty-per-cent alcohol. It is particularly the relation of the ash to water and to the alcoholic extract which furnishes valuable points for the estimation of the amount of chloride of sodium added. And from the quantity of the alcoholic extract, compared with the percentage of ash and the dry residue, the presence of gelatin and other substances insoluble in alcohol may be determined.

The first four extracts quoted in the accompanying table resemble, in their general features, Liebig's extract. Cibils' Extractum Carnis, and probably also the Pastoril "Extract of Beef" have had chloride of sodium added to them. "Saladero Concordia," when compared with Liebig's extract, which it otherwise much resembles, contains a remarkably low proportion of salt. It is probable that the beef in this case is not as thoroughly extracted as it is in the case of Liebig's extract. A comparative determination of the degree of acidity showed Liebig's extract to contain 2.84% and the "Saladero Concordia" only 1.51% of lactic acid.

The last six preparations quoted in the table are liquid extracts, the composition of which has heretofore been but little known.

	Name.	Water.	Ash.	Organ. Subst.	Nitrogen.	Sol. in Alcohol 80%	Chlorine in Ash.
1	Pastoril's Extract of Beef....	15.50	26.23	58.27	. ..	61.74	....
2	Pisoni's " "	17.74	19.68	62.58	....	64.68	.. .
3	Kemmerich's " "	18.88	19.46	61.66	....	59.06	.....
4	Cibils' Extractum Carnis	19.41	26.44	54.15	....	62.86	21.32
5	Liebig's Ext. (Fray Bentos)..	18.79	23.02	58.19	8 00	61.85	10.00
6	Saladero Concordia.....	21.88	15.85	62.27	9.64	58.29	.....
7	Kemmerich's Beef Peptone..	34.27	7.71	58.02	9.36	28.40	.....
8	Cibils Hermanos do. (liquid).	64.13	18.29	17.58	2.10	34.28	44.45
9	Koch's Peptone Buillon.....	59.58	15.88	24.54	3.69	32.78	43.19
10	Kemmerich's Cond. Bouillon	62 59	17.06	20.35	3.14	29.32	41.97
11	Maggis Bouillon Extract....	68.64	23.80	7.56	1.29	25.79	57.23
12	Morris, Canning & Co., Cond. Bouillon.....	64.24	13.41	22.35	....	29.87	.....

Regarding the taste of these products, the author of the paper states, that when two teaspoonfuls of each were dissolved in 250 C.c. of hot water, Cibils' liquid extract (No. 8) had more nearly the specific taste of bouillon than any other; it also had an agreeable saline taste. Koch's Peptone Bouillon appeared to have an insipid taste, in spite of the added spices. Closely resembling Cibils' were Kemmerich's bouillon and Morris' concentrated bouillon, though the latter could stand a little more salt.

All of these solutions were rendered turbid by more or less flocculent matters and contained small granules or crystalline fragments of tribasic calcium phosphate, which dissolved only slowly in hot water. In Morris' preparations, quite large crystalline lumps were noticed. The solution prepared with Maggis' extract, on the other hand was almost clear; yet, as will be seen by the analysis, this is almost purely a solution of salt, while Cibils', Koch's, and Kemmerich's preparations (Nos. 8. 9, 10), certainly contain some true extract of beef. The real extract of beef may be determined from the nitrogen.

[The omission of the percentage of nitrogen in the case of the first four numbers of the table evidently is due, not to the absence of nitrogen from these preparations, but to the fact that the author did not specially determine it.—ED. AM. DR.]

The author concludes with the remark that the old Liebig's extract is fully able to afford the advantages supposed to be inherent in the bouillon extracts.—RUDOLF SENDTNER in *Arch. f. Hygiene*, 1887, 253.

NATURALIST'S BOTTLE.

AN English firm advertises a "naturalist's bottle containing a material for killing insects without injuring their delicate organs" which will be a paying stock in localities where the small boy goes bug-hunting. The advertisement does not explain the nature of the poison, but it is well known among entomologists who have for a long time used similar bottles for killing and collecting their minute prizes. On to the bottom of a suitable bottle (which should be of a size to fit a coat-pocket) place a quantity of small fragments of cyanide of potassium; then pour in a mixture of plaster of Paris and water to a depth sufficient to hold the cyanide of potassium securely in place, and allow it to harden thoroughly. The plaster is sufficiently porous to allow the poisonous fumes to escape into the upper portion of the bottle which serves not only as a lethal chamber, but also for the storage of newly found specimens. In the illustration the layer of plaster is represented as unnecessarily deep.

Natnralist's bottle.

Clough's capsule and cork-screw.

A CAPSULE AND CORKSCREW COMBINED.

A NOVEL device, patented some time since, but only recently introduced to trade by the Clough Capsule Co., of 132 Nassau st., New York, is shown in the adjoining illustrations. The capsule consists of a round metal thimble, made to fit the outside or inside of any bottle, no matter of what size. It has little teeth which catch into the cork when it is pressed down and hold it tightly. The outside edge is corrugated so that the fingers will take hold readily. The *modus operandi* of using the capsule is quite simple. It is made to fit on top of the bottle and the cork is then driven down into it, level with the bottle. With a turn and a pull the capsuled cork readily comes out, the capsule thus acting as both cork holder and cork-puller combined, and making unnecessary the use of any corkscrew or other device.

The advantage of the capsule to druggists for prescription bottles can readily be seen. As a rule, the corks of these bottles are only half put in, and are consequently frequently broken off when an attempt is made to get at their contents. By the use of the capsule this inconvenience to the customer is obviated.—*Amer. Stationer.*

Diastase.

CHEMISTS seem to experience considerable difficulty in arriving at an agreement respecting the nature of diastase, its claim to an albuminoid character being especially the subject of dispute. Mr. Hirschfeld has attempted to solve the problem (*Arch. f. gesammte Phys.*, XXXIX., 499) by examining a "pure diastase" prepared by macerating coarsely powdered malt with an equal weight of one-per-cent solution of neutral acetate of lead, afterwards diluting with an equal quantity of water, straining and precipitating the red-brown liquid with alcohol, and redissolving the precipitate in water at 50° C., cooling and again precipitating. The diastase so obtained is said to be very active, to contain no sugar or reducing substance, and to give no color with Millon's reagent. Considering these properties and the published analyses of Zulkowsky, according to which the nitrogen diminishes in proportion to the purity of the ferment, Mr. Hirscheld holds that diastase is a *carbo-hydrate*, a kind of gum, and that any nitrogen found in it has its origin in impurities. On the other hand, working with diastase obtained by treating malt with water and precipitating with alcohol, the precipitate being redissolved and reprecipitated several times, Mr. Lintner has arrived at diametrically opposite results (*Journ. f. prakt. Ch.*, XXXIV., 378). He found that the more pure and more active the diastase the more nitrogen it contained, but that the preparation never exceeeded 10.42 per cent, and he therefore concludes that diastase is a proteid, probably an oxidation product of *albuminoid* matters.—*Pharm. Journ.*, May 28th.

A Label manufacturer of Edinburgh, Scotland, has invented a preparation which, when applied to paper, either in the process of finishing or afterward, renders indelible any writing which may be placed upon it.

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The AMERICAN DRUGGIST is issued in the latter part of each month, dated for the month ahead. Changes of advertisements should reach us before the 10th. New advertisements can occasionally be inserted after the 18th.

REGULAR ADVERTISEMENTS according to size, location, and time. Special rates on application.

NEWS ITEMS.

EXPLOSION of naphtha in a drug store in Antwerp, Holland, destroyed the building and buried ten persons in the ruins.

A FIRE originating among the chemicals in the photographic warehouse of E. & H. T. Anthony, in New York, on the 12th of July, caused a loss of about $100,000.

AN explosion of chemicals in the photograph gallery of E. H. Jayne, in Spencer, Mass., on the 12th of July, destroyed about $10,000 worth of property.

WINTHROP, CUNNINGHAM & SONS, of 45 South Front street, Philadelphia, having offices in New York and Tampico, Mex., made an assignment last month, owing to an attachment granted by the Supreme Court of New York in favor of Boehringer & Loehne, who claimed $10,350 upon a contract whereby the Philadelphia firm were to purchase 20,000 ounces of quinine.

THE value of the patents upon processes used in the manufacture of paraffin paper is illustrated by a recent newspaper statement that Roscoe Conkling was paid $10,000 for his argument before Judge Gresham in a patent case trial in Chicago last month.

NAVAL APOTHECARIES are signing a petition for increase of pay from $720 to $1,000 a year. The apothecary at the Mare Island Navy Yard is said to be the only one who receives the latter amount.

THE Examining Board recently appointed by the Governor of Pennsylvania, has been organized as follows: president, Alonzo Robbins, of Philadelphia; secretary, Henry B. Cochran, of Lancaster; treasurer, Frederick H. Eggers, of Alleghany.

Aschenbach & Miller, Philadelphia druggists, have become defendants in suits for damages from sickness and deaths caused by chrome yellow sold by them to bakers for use in coloring buns.

American Pharmaceutical Association.—The local committee of the A. P. A. meeting, to be held in Cincinnati September 5th, has made arrangements with the local passenger agents by which any delegate or visitor to the A. P. A. coming on roads centering in Cincinnati will receive a reduction of two-thirds of the return fare, upon presentation of a certificate from the agent selling him the ticket to Cincinnati that he paid the full fare, the certificate to be accompanied by a statement from the secretary of the Association certifying that he attended the meeting.

Persons residing in the Northeast will please confer with Mr. J. W. Colcord, of Lynn, Mass., who has kindly attended to obtaining reduced rates from Boston. Persons can go from that city for about the same price as from New York, being a reduction of four dollars. A party of twenty-five can have a special Pullman car through without change.

Persons desirous of going from New York will please address Mr. T. J. Macmahan, New York City.

The headquarters of the Association will be at the Grand Hotel, where rooms may be obtained for $3.00 per diem. The committee has made arrangements with other hotels, and accommodations may be had at from $1.50 to $4.00 per day. A blank slip will be mailed to members of the Association, and rooms secured by the local secretary upon its return.

The following are the rates: Gibson House, $3.00; Burnet House, $3.00; Palace Hotel, $2.00 to $2.50; St. James Hotel, $2.00; Dennison Hotel, $2.00, European plan; St. Nicholas, $1.50 or more; Hotel Emery, $1.00.

The programme of entertainment has been already published.

No exhibit will be had, as the committee was unable to obtain exhibits enough to make it a success.

The following are the terms for excursions to the various points of interest near Cincinnati: Mammoth Cave: leave Cincinnati 8:15 A. M., arrive 5:30 P. M. Leave 8 P. M., arrive 5:20 A. M. Fare for round trip, $13.75; 25 or more, $7.85; hotel bill, $3.00 per day. To a party the hotel and cave expenses will be reduced. Cave expenses short route, 8 miles, $2.00; long route, 18 miles, $3.00. Persons leaving Cincinnati in the morning can take the short route same evening, and the long route the following day.

To High Bridge on the Cincinnati Southern R. R.; single fare, round trip, $5.00. Five or more, $3.00; five or more on Sundays, $2.00.

Findlay Karg gas well, capacity over fourteen million cubic feet per diem, and a number of other wells, over eight million. To parties of 10 or more, one fare for round trip.

Dayton Soldiers' Home; parties of 10 or more, $2.50 for round trip.

GEO. W. VOSS,
Local Sec'y A. P. A.

THIRTY-FIFTH Annual Meeting, to be held in Cincinnati, Ohio, commencing Monday, September 5th, 1887, at 3 o'clock P.M.

As the chairman of the Committee on *Papers and Queries* contemplates being absent in Europe, the undersigned will act in his stead.

It is very desirable to have all papers intended to be read at the meetings of the A. P. A. printed beforehand, in order that copies may be in the hands of those in attendance whilst the papers are being read. Contributors will therefore please forward their papers to the undersigned at the earliest date possible.

All papers should be in the hands of the committee at least ten days before the meeting of the Association.

EMLEN PAINTER.
S. W. corner Broadway and 34th Street,
NEW YORK.

The Executive Committee of the National Wholesale Druggists' Association (which meets in Boston on August 23d) announce that they have arranged with the Hotel Vendome and the Hotel Brunswick for board at $4.00 per day, which is $1.00 less than their regular rates. Situated between the two hotels is the Hotel Victoria (recently built), and under the same management as the Vendome and the Brunswick. It is kept on the European plan, and the prices for rooms *without bath* are $1.50 to $3.00 per day when occupied by one person, and $2.00 to $4.00 per day for two persons. Rooms *with bath* are $1.00. extra. The hotels are first-class in every particular, and are located near together, in the pleasantest part of the city, and among the finer residences. Applications for rooms can be made to the hotels direct, or to Mr. Solomon Carter, chairman of the reception committee, 356 Washington Street, Boston. The executive committee will make their headquarters at the Vendome, and all business meetings of the Association will be held there.

The Alumni of the Cincinnati College of Pharmacy held its first quarterly meeting June 16th, 1887, and was well attended.

The Committee on Queries reported a list of twelve queries, of which ten were accepted to be answered at the next quarterly meeting. The list is to be printed and sent to different members not present to solicit papers in answer to queries in addition to those accepted.

The Amusement Committee reported that they had arranged for a basket Pic-nic, to be held at Coney Island, Ohio, on the 23d of June. As the committee expressed some doubt as to being able to obtain a sufficient number of excursionists to receive a rebate from the steamboat company, a sufficient number of tickets was subscribed for by the individual members present to guarantee the committee free from expenses, thereby insuring success.

The Publishing Committee reported verbally that it was necessary for the projectors of the Journal to become incorporated, and to issue stock of twenty dollars a share, payable in 25% instalments. The committee was given time until the next quarterly meeting to finish its report.

On the 23d of June, a large number of the Alumni and their families assembled at Coney Island to enjoy a holiday. Foot-ball and base-ball were indulged in, and at the end of the game, Professor Fennel, who had taken

his photographic apparatus with him, took a picture of the two nines in a group. Resp'y,

ALBERT WETTERSTROEM,
Cor. Sec'y Alumni C. C. P.

Rhode Island.—E. C. Danforth was elected Chairman of the Executive Committee of the Rhode Island Pharmaceutical Association, at the quarterly meeting, held July 13th.

Ohio.—The State Pharmaceutical Association met in Akron on the 8th, 9th, and 10th of June, the sessions being held in the council chamber of the City Hall, and the exhibition in Alyffe Hall. Virgil Coblentz, of Springfield, presided and delivered an opening address, followed by reports by the secretary, Lewis C. Hopp, of Cleveland, and the treasurer, Chas. Huston, of Columbus. The latter specified the receipt of $1,009.34, expenditures amounting to $883.44, and a balance of $125.90. Reports were made by the following-named standing committees: executive, trade interests, papers and queries, legislation, and pharmacy board. The following is an abstract of the latter:

During the year ending April 1st, 1887, the board held six meetings for the examination of applicants for registration as follows: Columbus, May 10th, 1886; Toledo, August 3d, 1886; Cleveland, October 12th, 1886; Columbus, November 23d, 1886; Cincinnati, January 10th, 1887; Columbus, March 1st, 1887. At these examinations 225 appeared to register as pharmacists, and 136 as assistant pharmacists. Of these applicants, 102 received certificates of competency as pharmacists and 48 as assistant pharmacists, being 46 per cent of the former and 35⅓ per cent of the latter. Your attention has heretofore been called to the small percentage of successful applicants at these examinations, and the marked decrease in the ratio during the past year is no flattering comment upon the training and education of these aspirants, when you consider that the aim has been to make the test a practical rather than a theoretical one. There must be a radical change in the views of the druggists of Ohio concerning the kind of material out of which they assist in manufacturing the pharmacists of the future. The majority of the examination papers, even of those which show a fair degree of proficiency in pharmaceutical skill, exhibit a lamentable ignorance of the elementary principles of a common school education. The idea appears to be, not "how high a degree of excellence can I attain in this my chosen line of work, but how little can I know to squeeze through the examinations of the board of pharmacy, and get a certificate to practise upon the people."

The receipts and expenditures for the year ending April 1st, 1887, are shown by Secretary Nipgen to have been as follows: cash on hand April 1st, 1886, $6,128.67, cash on hand April 1st, 1887, $402. Total, $6,530.67. Expenditures, for various items, which are set forth in the report in detail, $1,905.87, leaving a balance on hand of $4,624.80.

The Executive Committee reported the addition of 81 new members at the last meeting and the death of 7 members: Edward C. Kistner, Cincinnati; John F. Uthe, North Amherst; August Wagner, Cincinnati; Silas J. Nicolay, Hamilton; Emil Bexel, Cleveland; H. F. Reum, Cincinnati; P. F. Sterrick, Deltos.

The committee on trade interest reported that the past year has not been an eventful one to the drug trade. Cutting in prices has been found to be unremunerative to those who hoped by that means to capture their neighbors' patrons and has been entirely abandoned throughout the State. The beneficial effects of the Pharmacy law are being felt and as it becomes better understood and its provisions more fully enforced, we think it will prove as great an advantage to the trade as was expected by its friends.

"The liquor law, known as the Dow Law, in its bearings on the drug trade, has been the cause of some difficulty. Liquors used medicinally are a part of the druggists' business; and while your committee have no sympathy for those who turn their pharmacy into saloons, we think the restriction on its sale as medicine should not be limited to the prescription of a physician. The inconvenience is felt more severely in our small towns than in the cities, as many physicians are not in the habit of writing their prescriptions, simply telling their patients to send to the apothecaries for such remedies as they do not carry with them. And neither do many of our patrons think of applying to a physician for liquor any more than they do for camphor, peppermint or paregoric. The writer has been compelled more than once to send a customer to a neighboring saloon for liquor, when he had been directed by his physician to go to the drug store for it, but failed to give his written order. Your committee are aware that it is a difficult subject to handle, but do not think it was the intention of our legislators to do any one an injustice and think the law might be so amended as to allow the druggist to be the judge of its legitimate use either by requesting the name of the buyer to be registered as in the purchase of poison or the customer to sign a certificate that it is not to be used as a beverage.

"The absence of speculation and the unusual steadiness of prices have enabled druggists to make a fair and legitimate profit, and the dulness of the trade in the earlier portion of the year has been succeeded by a decided increase in the volume of sales in all branches of the business, so that your committee think that the year has been a satisfactory one to the trade in general."

The report of the committe on papers and queries was to the effect that the replies to the queries printed in the annual proceedings had not been so numerous as they were the two previous years, but the quality of work had been of unusual excellence and in this respect the committee felt well repaid for its labor.

The committe on legislation reported no antagonism to the present law and recommended the enactment of a law exempting pharmacists from jury duty.

The following-named officers and committees were chosen: president, S. E. Allen, Akron; vice-presidents, M. D. Fulton, Bucyrus; Geo. W. Voss, Cincinnati; secretary, Lewis C. Hopp, Cleveland; treasurer, Chas. Huston, Columbus; exec. com., Theo. F. Troupe (chairman), Springfield; C. F. Inman, Akron; C. P. Rendigs, Cincinnati; local secretary, H. C. Cook. To fill a vacancy on the State board of pharmacy, the following nominations were made to the governor: John A. Nipgen, Chillicothe; G. L. Hechler, Cleveland; M. D. Fulton, Bucyrus; C. N. Nye, Canton; Philip Lehr, Cleveland.

Over seventy new members were acquired.

The next meeting will be at Columbus on the second Tuesday in June next.

The treasurer was instructed to make an arrangement with some Columbus bank for the collection of unpaid dues.

The constitution was amended to permit the acquisition of life-membership on the payment of ten dollars.

The secretary was instructed to attend the annual convention of secretaries of State associations, which is coincident with the meeting of the American Pharmaceutical Association.

The following papers were read: "Sulphate of Morphine" by P. J. Spenzer, of Cleveland; "What is the general Quality of the Pressed Drugs of the Market" by Joseph Feil, of Cleveland; "The Hand-writing on the Wall" by J. U. Lloyd, of Cincinnati; "Formula for Solution of Ferrous Citrate yielding 6.52 per cent of Ferric Oxide" by Chas. Fennel, of Cincinnati; "Degree of Adulteration of commercial Black Oxide of Manganese" by S. W. McKeown, of Youngstown; "Proportion of Resin in commercial entire and powdered Jalap" by E. H. W. Stohlhuth, of Cincinnati. "Is the powdered Opium sold in Bulk up to pharmacopœial Requirements?"

In the course of his address, the president remarked that the present membership is 910.

Michigan.—The State Board of Pharmacy held an examination at Detroit on the 5th and 6th of July. The board consists of Ottmar Eberbach, of Ann Arbor, president; James Vernor, of Detroit, treasurer; Jacob Jesson, of Muskegon, secretary; Stanley E. Parkill, of Owosso, and George McDonald, of Kalamazoo.

Fifty-one out of seventy-one candidates were successful.

The School of Pharmacy of the University of Michigan held its nineteenth annual commencement, in connection with the semi-centennial celebration of the University, on June 29th and 30th.

The meeting of the Alumni took place in the lecture room of the chemical laboratory, and was very successful. A committee was appointed to select and obtain a suitable memorial for the late Henry B. Parsons. The following officers were elected for the ensuing year: president, Prof. A. B. Stevens, of Ann Arbor; secretary, T. A. Reyer, of Detroit; treasurer, A. C. Schumacher, of Ann Arbor. The society then adjourned to a sumptuous banquet.

After the banquet, Mr. F. F. Prentice, class of '72, and ex-president of the Wisconsin State Pharmaceutical Association, delivered an interesting address on the growth of the college and its relation to higher state education.

Thirty graduates were awarded the diploma of Pharmaceutical Chemist.

THE annual meeting of the Michigan Pharmaceutical Association, held at Petosky, on the 12th and 13th of July, was well attended and listened to papers by Prof. Prescott, on "What Disinfectants and Antiseptic Preparations can the Dispensing Pharmacists make with Advantage?" and "Which are the more uniform in Strength, Preparations made by Weight or Measure?" by Ottmar Eberbach. "Is an Apprentice in a Drugstore entitled to receive instructions in Practical Pharmacy from his Employer, and to what extent is the latter held to grant a reasonable time for daily study?" by H. M. Snow. "The alkaloidal Strength of Ipecac Root and Fluid-extract;" by Mr. R. L. Stowell. "What practical Use can the Druggist make of the Microscope, and what is the cost of such an instrument as will serve his purposes?"

The following officers and committees were chosen: president, A. Bassett, of Detroit; vice-presidents, G. M. Harwood, of Petosky, H. B. Fairchild, of Grand Rapids, H. Kiphart, of Berrien Springs; secretary, S. E. Parkhill, of Onana; treasurer, W. Dupont, of Detroit; local secretary, J. Vernor, of Detroit. The association has 778 members and has its next meeting in Detroit on the second Tuesday of October, 1888.

CORRESPONDENCE.

Distinction between Oils of Erigeron and of Fireweed.

WE are in receipt of a communication from our friend, Mr. Albert M. Todd, of Nottawa, St. Joseph County, Michigan, in which he informs us that Prof. Flückiger has just notified him of the discovery, in oil of erigeron, of a constituent which permits this oil to be sharply distinguished from oil of fireweed (*Erechthites hieracifolia*). The material for the researches carried on by Prof. Flückiger had been supplied by Mr. Todd, who is himself making valuable contributions to our knowledge of various essential oils, having, as is well known, special facilities for growing the plants and distilling the oils on a large scale. Prof. Flückiger writes:

"As to oil of erigeron, I have prepared from it a fine crystallized compound, which I have named *limonen tetra-bromide*, $C_{10}H_{16}Br_4$, by diluting one part of the oil with ten parts of glacial acetic acid, and slowly adding bromine until, in the cold, crystals of the tetrabromide begin to appear. Sometimes several weeks are necessary to arrive at the formation of the bromide in the shape of crystals. They may be collected and recrystallized from warm acetic ether. Now, as to the oil of Erechthites (fireweed), as sent by your kindness, a similar compound could not be obtained from it."

Pharmaceutical Legislation in Louisiana.

To the Ed. Am. Druggist.

I am obliged, as a country druggist, to correct the error your informant committed, when he told you that the opposition to the enactment of a pharmacy law in this State came largely from the country pharmacists. The opposition did come from the country store-keepers, who sell all kinds of drugs and medicines, without employing a competent person to do so. And those country store-keepers yield and possess a big influence on the members of the legislature.

It is nevertheless the fact that the country druggists, whom the law would most benefit, have displayed very little, if any, interest in its passage. Very few of them attend the annual meetings of the State Association. The city members have become somewhat disgusted and do not see the necessity of their keeping up a local and State Association. They derive all the benefits of an association from a city society, which holds monthly meetings.

I remain, yours. JOS. T. THIBODEAUX.

THIBODEAUX, LA., June 24th, 1887.

Pills in Shells.

A CORRESPONDENT sends us the following:

After reading the item on page 63 of the June number, "Didn't want the pills in shells," I was reminded of a case I had some few months ago. The customer was an oldish lady who had worked herself all out on a farm, situated about a mile out, and she is one of the "fussy" kind. She came into my store just after I returned from dinner with a prescription as follows:

℞ Salicine..... ....gr. xxiv.
Pv. Cinchona Rub..... . .gr. xij.
M. Put into capsules No. 24. Sig. One before meals.

I prepared the medicine according to orders. The lady paid and went home. About five o'clock she came in all out of "wind," and asked where Dr. —— was. I informed her that he had gone out of town and wouldn't be back for several hours. "Oh, dear, what shall I do? I must see him at once!" I asked her what the trouble was, if any one was hurt? "Why," said she, "I have swallowed one of those little *glass boxes* you put my medicine up in, and I am afraid it will kill me, and what *shall* I do? The doctor said he would have it fixed so I wouldn't taste it, and I thought it was pills, and so I took one and after I swallowed it, I picked up another one and as soon as I pinched it a little in my fingers it *all flew* to pieces, and then I found out it *was glass*. Now, why didn't you tell me to turn the medicine out of those glass boxes before taking it? But you didn't, and as I can't see very well, I have swallowed the glass and all, and you don't know how my stomach feels, it will surely kill me. Oh, what shall I do, and can't you give me something? Oh, dear, how my stomach burns and aches! You ought to be put in jail for giving people medicine in little glass boxes and calling them pills. Did you make a mistake, or did you try to kill me? Oh, dear! Give me something, quick, or I shall faint." I finally got her quiet, after hearing such talk as this for half an hour, and then I was able to explain what those little glass boxes were for and what they were made of, but finally had to dissolve one to satisfy the old lady that there was no glass about them at all, and that she would not die, and that there was no harm done, etc. She replied that those were the funniest things she ever saw, and upon that she went home, feeling better. Since that time I have explained to every old lady that wanted capsules what capsules were made of, etc., before letting them go out.

Iodoform and Nitrate of Silver Caustic.

HOUSTON, TEX., June 6th, 1887.

ED. AMER. DRUGGIST:—Lately I have noticed an item copied from *Les Nouveaux Remèdes* that Dr. Malthe used iodoform and nit. silver cauterizing ulcers, combining the two. I have used this process on venereal ulcers for a year past, but did not think it worthy of publication; however, it being brought forward, I will say I first thickly sprinkle the ulcer with iodoform, then moistening a point of lunar caustic very thoroughly, plunge it suddenly into the iodoform and press firmly into the ulcer; a sudden violent effervesence occurs, almost painless and very thorough in its effects.

I would call the attention of the medical fraternity to the efficient action of hyoscyamus and bromide of potash in acute dysentery. Combining 8 to 10 drops of fl. ext. hyoscyamus with one drachm of bromide potassium given every four hours, I have apparently suppressed the disease at once, and cured the attack in three doses. Also have found the best of good results in dysentery and other inflammatory affections of the bowels from the following repeated every four hours.

℞ Ext. Hyoscyami Fl.,
Ext. Ipecacuanhæ Fl..... ....āā gtts. x.
Potass. Brom..... ..... .℥ i.
Ess. Cinnam.,
Syrupi,
Aquæ..... .....āā q. s.

Sig. Take at one dose.

Three doses a cure generally.

Respectfully,
J. S. WILSON, M.D.

An Ethical Question.

Editor of American Druggist:

DEAR SIR:—Through the columns of your valuable paper, I would like information on the following points:

1. Is a physician justified in giving a name to a mixture and prescribing it under that name, providing he does so simply as a matter of convenience and is willing to give the formula to any druggist desiring it?

2. Was the druggist justified in the following? Wrote a prescription:

℞ Tannin Gargle .... ℥ ij.

Sig. Tablespoonful to half pint water for gargle, intending to have a mixture of tannin, glycerin, and carbolic acid. On my next visit, found the druggist had dispensed simply a solution of tannin in water; told the patient it was not what I had intended, to take it back to the druggist, and I would call at his store and explain. Not finding the druggist in, I was unable to see him until after the prescription had been returned, when, after making some very uncomplimentary remarks about the physician who wrote "blind prescriptions for the purpose of compelling patients to trade at a certain store," he made some slight change and sent the bottle back, still being ignorant of what I had intended. When I wrote the prescription I knew nothing of where it was going.

In closing, I will state that I have been accused by the druggist in question of influencing my patients to take their prescriptions to another store, but with no foundation or truth, although I had bought most of my drugs elsewhere, claiming the right of any citizen to buy where goods are best and cheapest. This same druggist has had similar trouble with four out of the five physicians who have practised here in the last five years.

Yours respectfully.

First.—No! When a physician writes a prescription, it should specify exactly what he wants his patient to have, and, we may add, he should also write it so that it can be read, and not oblige the apothecary to decipher it as if it were a puzzle.

Accepting the writer's statement that he had no intention of obliging his patron to take the prescription to a particular store, we are disposed to put the word *indolence* in the place of "convenience," and put it in Italics, too.

Second.—No! An apothecary has no business to guess at the probable ingredients of any prescription, and it is a matter of choice and expediency whether he declines to put it up or spends time and labor in finding the doctor and getting more explicit instructions.

There are only three explanations for such a prescription as the one above mentioned; the one suggested by the correspondent, laziness, or ignorance, and the statement that "this same druggist has had similar trouble with four out of five of the physicians who have practised here in the last five years" favors the idea that the druggist must have had a run of pretty bad luck with his local practitioners, and that he has pretty good justification for some ill-temper.

The National Retail Druggists' Association is to hold its last meeting in Cincinnati on the 5th of September; certain changes to be made this year in the order of business of the American Pharmaceutical Association will render the separate organization unnecessary.

QUERIES & ANSWERS.

Queries for which answers are desired, must be received by the 5th of the month, and must in every case be accompanied by the name and address of the writer, for the information of the editor, but not for publication.

No. 1,963.—**Blast and Blow-Pipe Lamp** (R.),

As a supplement to Query 1,933, in which we were asked to mention the inventor and manufacturer of the blow-pipe illustrated and described on page 45 of our March number, we would state that the inventor's name is Busch, and that it is manufactured for sale by Koch & Co., of Elberfeld, Germany.

No. 1,964.—**Blackboard Paint** (Eduard).

A recent formula, given by several of our exchanges, reads as follows:

Shellac	4 oz.
Ivory Black	2 "
Emery (in fine powder)	1 "
Ultramarine Blue	1 "
Methylated Spirit	1 qt.

Mix the whole, and agitate occasionally until the shellac is dissolved.

In place of "methylated spirit," which is a commodity of English commerce only, ordinary alcohol may, of course, be used.

No. 1,965.—**Valangin's Solution** (F. O. R.).

This is a solution of arsenious acid in water containing a very little hydrochloric acid. It is also called *Valangin's Mineral Solvent.* The formula is:

Arsenious Acid, powd.	0.1 Gm.	1½ grains.
Hydrochloric Acid	2 drops.	2 drops.
Distilled Water	33 Gm.	510 grains.

Dissolve by digestion.

Average dose 3 to 10 drops ($\frac{1}{3\,6}$ to $\frac{1}{1\,1}$ grains of arsenious acid) three times daily.

Several of the questions contained in this correspondent's letter cannot be answered here, as they will either have to be referred to a lawyer or are not capable of a satisfactory and *brief* answer.

No. 1,966.—**Albolene** ("Ana").

We have already before mentioned this substance, but will give a somewhat more detailed account of it here.

Albolene is a name given to a petroleum ointment or petrolatum, prepared from a peculiar species of petroleum, which is absolutely odorless, tasteless and, when liquified colorless. In its natural condition, at the ordinary temperature of our climate, it has a whitish, semi-translucent appearance, and the consistence of vaseline. It melts between 110° and 130° F. It is unquestionably the purest and most elegant of all petroleum ointments ever produced, its want of specific color making it particularly valuable for many medicinal ointments, and especially for toilet preparations. In price, it compares favorably with the ordinary yellowish petroleum ointments of the market, being but little higher than the latter.

No. 1,967.—**Argan Oil.**

This oil is obtained by expression of the fruit-kernels of the Argan tree (*Argania Sideroxylon*, or *Sideroxylum spinosum* L., nat. ord. *Sapotaceæ*) growing only in the south-western provinces of Morocco to the south of the river Tensift. It resembles the olive tree in appearance, but its leaves are somewhat darker and the fruits lighter colored and larger than those of the olive. The stem and the wood are entirely different from the latter. The bark is almost smooth and uniform throughout; the wood is darker and harder than olive wood and is highly esteemed for its resistance to decay. The tree grows upon sandy soil and attains a very old age. The chief value of the tree resides in the fixed oil, which is used throughout the country and is also exported in considerable quantities. The natives use it, among other purposes, for food or for cooking, but Europeans do not take kindly to it. When it is properly purified, however, it is equal to the best olive oil.

No. 1,968.—**Velpeau's Injection** (P. R. Mc.).

The following is quoted by Hager and other authorities as the composition of

Enema Balsamicum,
or *Lavement de Copahu.*

Copaiba	20 Gm.	300 grains
Yolk of Egg	*one.*	
Infusion of Mallow Flowers	500 Gm.	16 fl. oz.
Tincture of Opium	2 Gm.	30 ♏.

Dorvault, on the authority of Soubeiran, gives the following composition:

Copaiba, 30 Gm.; Tincture of Opium, 1 Gm.; Yolk of Egg, *one;* Water, 250 Gm.

Which of these corresponds to the article mentioned by our correspondent we are unable to say. At all events, the difference is not very material. By the way, infusion of mallow flowers is officinal in the French Pharmacopœia, and is to be prepared by infusing 1 part of mallow flowers with 100 parts of boiling water.

No. 1,969.—**Artificial Quinine** (D. W. A.).

We have never seen a sample of Dr. Hewett's artificial quinine, and believe that we never shall. From the very first we had no faith in the claims and statements made by this person, for, so far as we could judge from the published facts, there never appears to have been any one who saw or obtained more than an insignificant sample of the article, and some of these samples, on analysis, turned out to contain the identical contaminations found in natural commercial quinine made from the bark. The discoverer will have to produce much more convincing proofs of his invention than he has done so far before we shall even begin to believe in his assertions.

The *British and Colonial Druggist* recently dispatched a special agent to Belgium, where Dr. Hewett claimed he had established a factory. This agent, however, according to the journal quoted, could not find any person in the very place where the factory was pretended to be located who had any knowledge of its existence, though he did find a person with whom Dr. Hewett had negotiated without success. We cannot, of course, say whether the agent was unsuccessful only through want of detective ability. We merely state the facts as related by our cotemporary.

No. 1,970.—**Lister's Carbolic Paste** (N. K. M.).

This correspondent asks us for the formula of *Liston's Carbolic Paste.* We have had the query upon our desk some time, as we desired to make inquiries about the matter, though we had a suspicion in the beginning that some of Prof. Lister's preparations is intended. We are now quite convinced that this is the case. The formula which our correspondent is probably in search of is the following:

Carbolic Acid, pure	5 parts.
Linseed Oil	20 "
Prepared Chalk	q. s.

Mix them so as to form a mass of the consistence of a soft ointment.

Recent authorities have modified the proportions and constituents somewhat. Dieterich, for instance, has the following:

1.	Carbolic Acid	50 parts.
	Linseed Oil	350 "
	Precip. Carbonate Calcium	600 "
2.	Carbolic Acid	50 parts.
	Olive Oil	450 "
	Wheat Starch	500 "

No. 1,971.—**Silver, Silver Nitrate and Chloride, etc.** (F. O. R.).

1. *Filter to be used in filtering off silver chloride.* The querist states that his filters break. If he precipitates a watery solution of nitrate of silver with hydrochloric acid, and there is not water enough to properly dilute the nitric acid separated, then, of course, the filter is apt to break. The solution should be diluted to a very large extent. Or, the silver salt should be decomposed by a solution of chloride of sodium or better, of chloride of ammonium. If either of these salts are used, however, it is advisable to add a very small quantity of nitric acid, so as to have the liquid acidulous. The chloride of silver will then separate much more easily, especially on shaking or brisk stirring.

2. *Fineness of U. S. silver coin.*—U. S. silver coin is nine-tenths fine, that is 1,000 parts of coin contain 900 parts of pure silver, with an allowed variation of 3 parts either way. The other 100 parts consist of copper, and very minute traces of gold or other metals. A silver dollar weighing 412½ grains should yield, when converted into chloride of silver, 531.2 of the latter, namely: 412.4 grains of coin, containing 90 per cent pure silver, represent 371.25 grains of this metal. When this is converted into chloride—taking the molecular weights 107.7 for silver, and 35.4 for chlorine—the result will be 531.25875 grains of AgCl. The exact amount of *pure* chloride of sodium necessary to precipitate the nitrate of silver produced from the above-mentioned coin would be 201.3 grains. ($AgNO_3$, 169.7 parts [containing 107.7 parts of silver] require for complete precipitation NaCl 58.4 parts.)

No. 1,972.—**Basis for Suppositories** (R. O.).

"What is a good substitute for Cacao Butter for making suppositories? Would a combination of petrolatum, wax, and paraffin do?"

In our judgment, there is no better basis than Butter of Cacao, owing to the readiness with which it melts when introduced into the rectum. If it is desired to have it melt less rapidly, a little wax can be combined with it.

The next best basis, we believe, is a combination of gelatin and glycerin, regarding which we refer you to our June number, page 112, where you will find full information. Sometimes powdered or grated Castile soap, mixed with glycerin or honey, or other bland liquids, or curd soap (animal soap), with starch, or starch and glycerite of starch, or suet, etc., etc., will form a good basis, but they should not be used promiscuously. Soap, for instance,

should only be used in the case of suppositories intended to have a laxative effect.

As to petrolatum and paraffin, we have never tried the combination for suppositories, and would say that theory appears to speak against them, from the fact that while mucous membranes have an affinity for aqueous or other liquids which can "wet" them, that is, such as are not repelled by their moist surface, and while they can even form an affinity for fatty substances which are saponifiable, such as fixed oils, it is pretty well known that mineral hydrocarbons, to which class petrolatum and paraffins belong, are repelled by it energetically. It is quite probable that an active remedy mixed with such a base would not be able to exert its full benefit. However, this is only speculation, and needs confirmation by experiment. You might interest some physician engaged in hospital practice to make comparative trials.

No. 1,973.—**Darkening of Solutions of Salicylates** (E. O.).

It is well known that solutions of salicylates will gradually darken under certain circumstances. What the precise nature of the change of color is has not been completely determined, though it is likely to be of a similar nature as the dark-colored tarry substance which may be separated from commercial salicylic acid by subjecting it to sublimation. It is known that the darkening of such solutions depends greatly upon their degree of alkalinity. Even a neutral solution will gradually darken; and the more alkaline a solution is, the more rapid will be the change of color. If the solution is acid, however, either by an excess of salicylic or certain other acids, the dark color does not make its appearance at all, or but very faintly and slowly. All solutions of salicylates do not behave alike. A solution of salicylate of lithium, if alkaline, darkens more rapidly than one of salicylate of sodium of corresponding alkalinity (at least such has been our observation). The change takes place also in the dark, though more slowly.

If the salicylate is prepared extempore, by dissolving the caustic or carbonated alkali in a solution of salicylic acid, the darkening may be almost entirely prevented, or at least greatly retarded, by adding the alkali cautiously *to* the salicylic solution, but not *vice versa*. In this way, there will always be salicylic acid present in excess, while the slightest excess of alkali will at any time promote the darkening. For this reason, also, the solution of the alkali should be added in a thin stream, under constant stirring, so that there may not be at any time a notable portion of the solution temporarily rendered decidedly alkaline.

The darkening of solutions of alkali salicylates may be prevented by adding to them a little hyposulphite of sodium, about two drachms to the pint.

This addition is perfectly innocuous and unobjectionable, and as it accomplishes its purpose, viz., the decomposition of the salicylate, we have no hesitation in advising its employment.

No. 1,974.—**Mistura Apii Graveolentis Composita** (F. W. O.).

We have not printed any comments on the above preparation, but since the question has been raised, we will say a few words. We presume the title is intended to be that of a preparation meant to be an imitation of or a substitute for a well-known proprietary medicine. Some years ago, a committee of the Illinois Pharm. Association recommended the following formula for its preparation:

Compound Elixir of Celery.

Fluid Extract of Celery Root	1 fl. oz.
" " " Coca	1 "
" " " Viburnum Prunifolium	1 "
Alcohol	2 "
Sugar	4 tr. oz.
Spirit of Orange	2 fl. dr.
Water, enough to make	16 fl. oz.

Add the Spirit of Orange to the Alcohol and to this add 1 fl. oz. of water. Mix this gradually with the Fl. Ext. of Celery, and then add the other fluid extracts. Pour this mixture into the syrup obtained by dissolving the Sugar in the remainder of the water and mix thoroughly. Let stand two days and filter, adding water, if necessary to fill up the measure.

In this form, and bearing the provisional title: *Elixir Apii Compositum*, the preparation was inserted into the *Draft for a National Formulary* published by the American Pharm. Association, and which is now in the hands of a committee for revision.

It has been pointed out that the title "Elixir Apii Compositum," or "Mistura Apii Composita" is liable to, and has in fact already been the cause of a misunderstanding, which may have serious consequences, the word "Apii" being mistaken for "Opii," so that McMunn's Elixir or some other preparation of opium may be dispensed. For this reason, the proposition is made that the adjective "Graveolentis" be placed behind the word "Apii." Another question, whether the formula will be finally introduced into the Formulary at all or not, is one which is still *sub judice*, and need not be discussed here at present. The formula has also been criticised in another respect, namely, that fluid extract of celery seed should be used instead of that made from the root.

No. 1,975.—**Hair-dyes** (W. E. B.).

We give a few formulæ from our files:

1. *Brown.*

I. Dissolve 1 oz. of sulphide of potassium (liver of sulphur) in 6 fl. oz. of water or of alcohol; let stand and pour off the clear solution, or filter it and keep it in a bottle by itself.

II. Also dissolve 1 oz. of nitrate of silver in 6 fl. oz. of water and keep the solution in a deep amber-colored vial.

When the hair is to be colored, wash it thoroughly with dilute ammonia, allow it to become nearly dry, then treat it with solution I., preferably made with alcohol, as it will dry quicker, and rub it in with a soft brush. When it is dry, apply a little of No. II. with another similar brush in like manner, great care being taken that neither solution comes in contact with the skin. When the hair is dry, wash it with soap and water, allow to dry and apply a little hair oil or pomatum.

2. *Black.*

I. Sulphide of potassium 1 oz., water or alcohol 6 fl. oz.
II. Nitrate of silver 1 oz., water 6 fl. oz.
Apply as in No. 1.

3. *Dark Brownish-Black.*

I. Same as in the preceding.
II. Nitrate of silver 1 oz., water of ammonia 1 fl. oz. Distilled water 1 fl. oz.

The sulphide of potassium used in these cases should be as fresh and free from impurities as possible.

4. *Brownish-Black.*

I. 3 oz. of powdered galls are boiled with 8 fl. oz. of water, the mixture, when cold, filtered and bottled.
II. 1 oz. of nitrate of silver dissolved in 5 fl. oz. of water and 3 fl. oz. of water of ammonia, applied as in No. 1.

5. *Chestnut-Brown.*

Dissolve 1 oz. of permanganate of potassium in 1 pint of water.

Applied as in No. 1, I. The brown color makes its appearance quickly, and may be deepened by applying the preparation oftener. As in the silver preparations, care must be exercised not to allow any of the liquid to come in contact with the skin.

No. 1,976.—**Ethereal Fluid Extract of Ergot** (H. W. D.).

We are asked to publish a formula for an "ethereal fluid extract of ergot," but confess our inability to do so, if it is expected that the product will represent the active principles of ergot.

It is not definitely known, to the present day, which of the several principles extracted from ergot possesses, either by itself or in combination with others, the oxytocic property of the drug. Yet of all solvents that could be used, ether appears to be the least suitable to extract the active principles. This menstruum abstracts chiefly fatty oil and wax. Nevertheless, it extracts also at least portions of an alkaloid which has been discovered by Tanret and named *ergotinine*, and to which a part of the medicinal effects of ergot must be ascribed. There is, however, still some doubt attached to the individuality of this substance, since several very skilled investigators, among them Dragendorff, have been unable to obtain it, working by Tanret's process. Among other principles extracted from ergot, and to which the physiological effect has been, in part at least, ascribed, are Wenzell's ecboline and ergotine, Buchheim's ergotin, Kobert's cornutine, Dragendorff's and Podwissotzky's sclerotic or sclerotinic acid, etc., etc., and all of these are insoluble in ether. Under these circumstances, it would be certainly unwise to trust to an ethereal fluid extract of ergot, at least theoretically. It is known that a hydro-alcoholic extract contains all these principles, and that an extract may even be prepared containing all or nearly of all them and completely soluble in water. What good an ethereal *fluid* extract could do we fail to see. It could not well be applied hypodermically or endermically, nor would it be suitable for internal administration. An extract prepared by ether and deprived of the excess of the latter would contain the fixed oil, of which ergot contains about 33 per cent, also a little wax and, according to Tanret, some ergotinine, besides certain coloring matters and probably minute quantities of other substances.

While we believe it entirely useless to prepare an *ethereal* fluid extract of ergot, we believe that there is some room for a fluid extract of ergot *purified by ether*, that is, a fluid extract made in the usual manner from ergot previously exhausted with ether. It has long been ascertained that a hydro-alcoholic fluid extract of ergot is apt, on standing, to separate more or less abundant insoluble matters, which sometimes adhere in solid resinous chunks to the walls and bottom of the containing vessel. A good deal of this precipitate is due to oil and wax, which partly enter into solution. If these bodies are previously removed, the fluid extract is less likely to precipitate. It has also been demonstrated that after ergot is once ground or powdered, it preserves its medicinal qualities much

longer if deprived of oil immediately after being ground, no doubt owing to the oxidizing action of the air upon the oil, which is thereby rendered rancid and acid and exerts some action upon the other principles.

No. 1,977.—**Artificial Urea** (G. J. H.).

Urea, as you are probably aware, was the first organic compound which was prepared artificially. The story has been so often told that we need not take up space with a repetition of it. When urea is required for experimental purposes, it is not necessary to use the natural product obtained from the urine, as it is not so easy to obtain it in a perfectly pure state. The artificial product is much preferable in this case. It may be prepared in the following manner.

Make an intimate mixture of 1,000 parts of ferrocyanide of potassium deprived of its water of crystallization, and of 375 parts of purified carbonate of potassium freed from water at a low red heat. Place the mixture into an iron pot, cover it well, and heat it over a moderate fire (best in a charcoal furnace) until the mass is quietly melted. Allow to cool a little and then add, in small portions at a at a time, 1,875 parts of dry minium (red lead), replace the pot on the fire, and keep the mixture for some time at a melting heat.

After the reduced lead has settled to the bottom, the still liquid mass is cautiously poured out upon a clean iron plate, and allowed to cool. It now contains *cyanate of potassium*:

$$\underset{\text{ferrocyanide potassium}}{K_4Fe(CN)_6} + \underset{\text{carbonate potassium}}{4K_2CO_3} + \underset{\text{minium}}{5Pb_3O_4} = \underset{\text{cyanate potassium}}{24KOCN} + \underset{\text{metallic lead}}{15Pb} + \underset{\text{ferrous oxide}}{4FeO} + \underset{\text{carbonic oxide gas}}{4CO}$$

The ferrous oxide, of course, is rapidly changed to ferric.

When the mass is cold, it is broken up, and dissolved in about 2,100 parts of water, and the aqueous solution, containing cyanate of potassium, filtered directly into a concentrated aqueous solution of 1,000 parts of neutral sulphate of ammonium. The resulting mixture is then evaporated over a water-bath, at a gentle heat, to a small volume. During the evaporation, and still more so after cooling of the concentrated solution, a large proportion of the formed sulphate of potassium will crystallize out. But the most remarkable change takes place in connection with the cyanate of ammonium which the liquid contained before the heating. This is by heat converted into the isomeric, but molecularly different urea (carbamide):

$$\underset{\text{cyanate potassium}}{24KOCN} + \underset{\text{sulphate ammonium}}{(NH_4)_2SO_4} = \underset{\text{cyanate ammonium}}{4NH_4OCN} + \underset{\text{sulphate potassium}}{K_2SO_4}$$

And by heat,

$$\underset{\text{cyanate ammonium}}{NH_4OCN} = CO\begin{cases}NH_2\\NH_2\end{cases}\ \underset{\text{urea}}{}$$

The final liquid, separated from the crystals of sulphate of potassium, is evaporated to dryness on the water-bath, and the urea extracted by boiling with strong alcohol (absolute alcohol is still better, if a perfectly pure product is desired). The alcoholic solution is treated with animal charcoal and then filtered and evaporated, so that the urea may crystallize. By repeating this operation one or more times, a perfectly pure product will be obtained.

No. 1,978.—**Steam Kettles for Pharmaceutical Laboratories** (W. A. S.).

This correspondent asks, what is the most effective and economical steam-kettle for use in pharmaceutical laboratories?

The question is a rather broad one, but, imagining ourselves in the place of a person desiring to fit up a pharmaceutical laboratory, in which all kinds of pharmaceutical operations are to be carried on, we will answer to the best of our ability.

We shall assume that the steam necessary for heating purposes is available, without taking into special consideration whether it is generated on the premises or is derived from somebody else's plant. In the former case, the boiler or boilers will probably have to do other work besides, so that it is somewhat difficult to calculate the exact share of expense which the single steam kettle involves. If the steam is hired, the agreement may be for a certain amount of steam as registered, or for the regular pressure for a certain time. No matter how the steam is obtained, however, *if there is any material waste of steam*, this will sooner or later appear in the accounts or returns. Supposing a high-pressure boiler supplies the steam, there will be proportionately a much greater waste of it if it is permitted to pass through the kettle without proper condensation than if low-pressure steam is used. At all events, the first point to be considered is how to utilize the heat conveyed by the steam to the utmost capacity without wasting it.

As steam kettles are ordinarily constructed, the chamber in which the steam does its work is in the form of a jacket, or double-walled chamber, constructed either by riveting an outer shell upon the lower part of the generally round-bottomed kettle, or by fastening the two parts together by flanges. It has heretofore been customary to leave the outer shell of the jacket unprotected. This shell is naturally of a larger square surface than the inner wall, since it is to be large enough to leave sufficient space between the shells for the circulation of the steam. All the work the kettle is expected to do is to be done in the inside; that is to say, the transfer of heat from the steam (or its condensation) is to extend only to the material to be heated. Yet it is safe to say that at least an equally large (and in some cases probably larger) quantity of heat is transferred from the outer shell to the surrounding air, which is constantly changing in consequence of the heated currents rising. It is evident, therefore, that if this waste of heat from outside can be stopped, a smaller volume of steam will be required to do the same work. And a smaller volume of steam will involve a smaller expenditure, either in coal or labor, or time, or wear of the kettle.

It is somewhat of a surprise that the well-known facts and principles here detailed had remained so long without practical application to steam *kettles*, though they had long been applied to steam *boilers*. Recently Mr. Thomas Burkhard, of 125 White street, New York, who has for years made all the steam apparatus used by one of us in the laboratory of the Department of Public Charities and Correction of New York, has obtained a patent for this improvement. We believe that we can do no better than to refer our correspondent to him.

No. 1,979.—**Methods of Detannating and Decolorizing** (J. E. L.).

This inquirer wants to know how to deprive wild cherry bark or cinchona bark of its tannic acid.

One way is to bring their infusion or alcoholic tincture in contact with ferric hydrate, freshly precipitated and, particularly in the case of cinchona, *not containing any free ammonia*, as this would cause the loss of some or nearly all the alkaloids. You might try the modified process of Prof. Remington, recently published (*Drug. Circ.*, May, p. 102), which will probably answer for both drugs. The process may be applied as follows:

From 6 fl. oz. of solution of tersulphate of iron prepare ferric hydrate as directed by the Pharmacopœia, wash it [until free from uncombined ammonia], then strain and press it until it weighs 8 av. oz. Mix 3 fl. oz. of fluid extract of cinchona with 8 fl. oz. of alcohol, and add the ferric hydrate. Agitate the mixture frequently until the tannin is combined, that is, until a small portion of the clear or filtered tincture ceases to give a dark color with a drop or two of tincture of iron. Then transfer the mixture upon a filter, or pour it into a percolator packed with absorbent cotton, and collect the clear tincture, which is then to be further treated as required.

We are also asked how a fluid extract of pinus canadensis may be decolorized. In reply, we would say that, though animal charcoal will probably do a good deal towards rendering the color lighter, we hardly think that it will be completely effective even after repeated treatment. We do not believe that a colorless *fluid extract*, in the true sense of the word, can be prepared. A colorless preparation may no doubt be made by distillation and admixture to the distillate of colorless menstrua. But this would not be a fluid extract. The same would be the case with hydrastis, regarding which we are also asked. A colorless preparation of hydrastis must be freed from berberine, which would impart to it a yellow color.

Yet our querist probably did not mean a fully decolorized preparation, but one which still contains the alkaloids of the drugs without the inert material. To obtain such a preparation, we advise him to use the process of Prof. J. U. Lloyd, as published in his "Drugs and Medicines of North America" (vol. I., 150):

"Percolate powdered hydrastis with officinal alcohol until the hydrastis is exhausted. Add to the percolate one-third as much by weight of alcohol as there was hydrastis, and evaporate the alcohol. After all the alcohol is driven off, mix with the residue enough cold water to bring the entire weight to two-thirds that of the hydrastis. After twenty-four hours, filter and add to the filtrate enough glycerin to bring to the weight of the hydrastis employed.

This preparation has a beautiful, deep yellow color, and when shaken, stains the bottle clear yellow. The taste is bitter, but not unpleasant and nauseating like some bitter drugs. There is no odor of alcohol, none being present, but it possesses the exact odor of fresh powdered hydrastis. . . . It contains all the alkaloids and acids of hydrastis in their natural combination."

As this is not a true *fluid* extract, Lloyd has proposed and uses for it the name liquid hydrastis (Liquor Hydrastis).

No. 1,980.—**Antifebrin** (Ph. G.).

Not *antifibrin*, but *antifebrin*, is the correct spelling. The substance, as we have several times already explained, is not a new compound, but has been known for many years under the name acetanilide. But up to within a year or so, it was not known that this substance had valuable medical properties. The discoverers of the latter thereupon gave it a new name, supposed to be more appropriate for use in prescribing, namely, *antifebrin*, from the Greek preposition *anti* "against," and the Latin noun *febris*, "fever."

Anybody can make, use, or sell acetanilide under its old name, as a chemical substance, irrespective of its use in medicine. But the word "antifebrin" is protected by the patent-laws, and only the authorized manufacturers and agents can use this term. Hence, when you receive a prescription calling for *antifebrin*, we do not think that you are justified in filling this from a stock of acetanilide, but that you should have recourse to an original package of antifebrin as put on the market by the authorized manufacturers. We are not favorably inclined to those who protect valuable medical inventions by a patent in order to enrich themselves upon the misfortunes of others. Yet we realize the fact that the entire discontinuance of patents for such inventions would be largely instrumental in removing the main incentive for bringing about such discoveries.

While, therefore, advising you to use for medicinal purposes only the product of the authorized manufacturers, there is no objection to your experimenting with the substance yourself, for the purposes of study. You may prepare acetanilide in the following manner:

Into a wide-necked flask of about 6 oz. capacity put 1 oz. of aniline (oil) and 1 oz. of glacial acetic acid; connect the flask with an upright condenser, and keep its contents at a strong boil until they congeal on cooling. Next transfer the mixture (if necessary, liquefied by heat) into a retort of about 6 fl. oz. capacity; connect this with a Liebig's condenser, and distil until the distillate begins to congeal about the neck of the retort. Then disconnect the condenser, change the receiver, and continue the distillation, taking care that the neck of the retort be kept quite hot, to prevent the congelation of acetanilide in the neck of the retort. The distillate in the receiver will speedily solidify, and presents a grayish-white color. It is purified by recrystallization from boiling water until it has become colorless, and possesses a melting point of 112° C.

The preliminary heating of the aniline and glacial acetic acid may be done in the same retort which is afterwards used for distillation; only the neck of the retort must be directed obliquely upwards, so that the condensed vapor can flow back again.

The chemical reaction is the following:

$$\underset{\text{aniline.}}{C_6H_5NH_2} + \underset{\text{acetic acid}}{CH_3.COOH} = \underset{\text{acetanilide}}{C_6H_5.NH.CO.CH_3} + \underset{\text{water}}{H_2O}$$

The pure substance forms colorless, shining plates, melting at 112° C. (233.6° F.), and boiling at 295° C. (563° F.). It is difficultly soluble in cold, more readily in hot water, and in alcohol. When boiled with solution of soda or with concentrated hydrochloric acid, it is decomposed into aniline and acetic acid.

No. 1,981.—**Determination of Fusel Oil in Alcohol** (Dr. M. S. W. and "U. S., Washington").

It depends altogether what is understood by the term "Fusel Oil." As it exists in crude distilled spirits, "fusel oil" is no doubt a very complex product, containing, besides amylic alcohol, certain compound ethers of the amylic series, aldehydes, volatile acids, etc., etc. With every subsequent rectification the number and quantity of these bodies decreases, the most resistant being probably the amylic alcohol. There is no reliable process known at present to determine the whole of the fusel oil. It is true that Roese last year proposed a method which appeared to give very exact results. It depends upon the ratio of increase in volume which a known quantity of chloroform undergoes when shaken with a hydro-alcoholic liquid containing fusel oil. But the variability in the composition of the latter renders the results of the test unreliable. Stutzer and Reitmair, however, have improved the process so that most of the cause of error is removed.

We will give an outline of the process, after the *Zeitsch. f. Anal. Chem.*, 1887, 377:

Stutzer and Reitmair recommend to work with liquids containing 30 per cent of alcohol, rather than with stronger ones, as it is easier to make the final dilution. Regarding the shaking with chloroform, the authors state that, when *alcohols* are under examination, the separation of a clear layer of chloroform takes place in less than one hour; in the case of brandy, rum, or other liquors, however, even after previous distillation, the presence of certain other constituents (besides amylic alcohol) causes the formation of a skin which renders a sharp reading off of the chloroformic layer impossible. This drawback, however, may be easily avoided, and the chloroform united to a sharply-defined layer in a few seconds, if a very small amount of sulphuric acid is added to the alcohol.

100 C.c. of the liquor to be assayed for amylic alcohol are mixed with a few drops of solution of soda, and then subjected to distillation in a long-necked flask, or in a flask provided with a long ascending glass tube (to cause condensation of the less volatile products) until ¾ of the the volume has passed over. The distillate is then made up to 100 C.c. with water, and the quantity of alcohol contained in it determined by means of the specific gravity. 50 C.c. of the distillate is then poured into a flask of the capacity of 100 C.c., and enough water added to produce, after dilution, a liquid containing exactly 30 per cent of alcohol. (See the appended table, below). Next, enough pure 30% alcohol is added to complete the 100 C.c., the liquid then mixed with 1 C.c. of sulphuric acid of spec. grav. 1.286 in a long glass-stoppered tube, specially graduated for this purpose—having the graduations beginning at the bottom—20 C.c. of chloroform are next added, and the tube, after being closed with the glass stopper, set into a large vessel of water of exactly 15° C. (59° F.). As the liquid should have possessed this temperature already at the time of measuring and mixing, the tube may be withdrawn from the water after a short time, and must then be strongly shaken for about two minutes, when it is replaced in the water. After the chloroform has separated, any small droplets adhering to the walls above may be united with the main volume by gently inclining the tube causing the droplet to combine with the main bulk. After all the chloroform is united, the tube is replaced in the water for a few minutes, then withdrawn, and the layer of chloroform read off.

The following table exhibits the increase of volume of chloroform after it has dissolved a certain amount of amylic alcohol, under the conditions above named.*

The amount of fusel oil (expressed as amylic alcohol) thus found, which refers only to 50 C.c. of the distillate, must be multiplied by 2, in order to show the true percentage in the liquor under examination.

Table of Increase of Volume of Chloroform and corresponding quantity of Amylic Alcohol, if Alcohol of 30% is under examination, and 1 C.c. of Sulphuric Acid (s. g. 1.286) added:

Increase of volume of the chloroform. C.c.	Amylic alcohol. Per cent.	Every additional 0.01 C.c. of increase of volume corresponding to per cent of amyl alcohol.
0.2	0.1	0.005
0.35	0.2	0.0057
0.5	0.3	0.006
0.65	0.4	0.0062
0.8	0.5	0.0063
0.95	0.6	0.0063
1.10	0.7	0.0064
1.25	0.8	0.0064
1.40	0.9	0.0064
1.55	1.0	0.0065

In summer, it is not always convenient to maintain a uniform temperature. It will then be necessary to employ a correction which has been calculated by the authors. The volume of the chloroformic layer increases for every degree of temperature by 0.1 C.c.

The following table is an extract from Brix's Dilution Tables, and may be used for making the prescribed dilution to 30 per cent alcohol, in the distillate obtained as above directed:

To Produce Alcohol of 30%.

To 100 C.c. of alcohol of vol. % alcohol.	Add water by vol.	To 100 C.c. of alcohol of vol. % alcohol.	Add water by vol.	To 100 C.c. of alcohol of vol. % alcohol.	Add water by vol.
30	0.0	49	64.1	68	129.4
31	3.3	50	67.5	69	132.8
32	6.6	51	70.9	70	136.3
33	10.	52	74.3	71	139.7
34	13.4	53	77.7	72	143.2
35	16.7	54	81.2	73	146.7
36	20.1	55	84.6	74	150.2
37	23.4	56	88.	75	153.6
38	26.8	57	91.4	76	157.1
39	30.2	58	94.9	77	160.6
40	33.5	59	98.3	78	164.1
41	36.9	60	101.8	79	167.6
42	40.3	61	105.2	80	171.1
43	43.7	62	108.6	81	174.6
44	47.1	63	112.1	82	178.1
45	50.5	64	115.5	83	181.6
46	53.9	65	119.9	84	185.1
47	57.3	66	122.4	85	188.6
48	60.7	67	125.9		

In a general way, the amount of water required to dilute a given alcohol to one of any desired per cent may be found from the following formula, for which the data may be taken from Hehner's tables:

$$x = \frac{100\,(p - p_1)\,a}{p_1}$$

where x is the amount of water required to be added, by volume, p is the percentage by weight of the given alcohol, p_1 that of the desired per cent, and a the spec. grav. of the original alcohol.

* The density of the acid must be exactly 1.286, as directed above. If sulphuric acid of another density is to be used, a new table of expansion for the chloroform would have to be worked out by experiment.

No. 1,982.—**Percolators and Percolation** (M. E. B.).

We have no great faith in the hot-water percolator you mention, for the reason that any percolate which is over-saturated—as must be one which is obtained with heated liquids—necessarily deposits, on cooling, such matters as it cannot retain in solution, and with every fresh deposition the solvent power of the remaining solution becomes altered, so that in many cases the precipitation continues, though perhaps very gradually, even though the product may be filtered clear from time to time. A percolate which has been obtained *clear* at a temperature as low or lower than any to which it is exposed afterwards usually remains clear, if care is taken that the menstruum is not altered by evaporation or dilution afterwards.

However, we might make a reservation in favor of the hot process percolator in certain cases. When the constituents of a drug which are to be exhausted are more of a resinous than gummy nature, and when the menstruum to be used is strong alcohol, the use of such a percolator will be an advantage, provided it permits the avoidance of loss of alcohol by evaporation. In other words, when making fluid extract of ginger, eucalyptus, nux vomica, squill, gelsemium, etc., the apparatus may be used, always providing that evaporation is prevented as much as possible. In the case of gentian, colombo, rhubarb, frangula, rumex, and many others, it is, in our judgment, entirely unsuitable.

We cannot recommend a better plan than the regular one, so well described in the "Preliminary Notices" to the last U. S. Pharmacopœia (page xxxv., etc.). The cost involved in repercolation is practically no more than that entailed by simple percolation, which usually involves more loss of menstruum and less permanency of product. Repercolation only necessitates the keeping on hand of a certain volume of reserve percolate for use in the next batch of the same drug. It accomplishes its object without any heat whatever. Ordinary percolation involves the reduction of the second or dilute percolate to a soft extract by the aid of more or less heat (sometimes so low that the recovery of the alcohol by distillation on a small scale is inadmissible), and the solution of this soft extract in the first percolate, with enough addition of the menstruum to make the proper volume.

The process of repercolation may be started and carried on in a practical way as follows: Supposing *ginger* is the subject and troy ounces and U. S. measure is to be used.

1. *First Lot.*

Ginger, in very fine powder.....16 tr. oz.
Alcohol.....a suff. quant.

Moisten the ginger with 4 fl. oz. of alcohol, let stand awhile, well covered [we prefer a maceration of more or less duration, according to the nature of the drug in all cases], then pack firmly in a percolator, and pour 1 quart of alcohol on top. When liquid begins to drop, close the orifice of the percolator and allow to macerate (well-covered) for a few hours [it is not necessary, and sometimes even injurious, to macerate long, as the dense percolate which began to collect at the bottom will gradually diffuse upwards, thus causing a less rapid exhaustion of the powder]. Then allow the percolation to proceed until 12 fluidounces of percolate have been *slowly* obtained. This is used as *fluid extract*.

The percolation is then continued, and more alcohol, if necessary, is poured on top until 1 quart more of percolate is obtained. It is of advantage to receive this in two or three separate portions, marked respectively I., II., or I., II., and III. These several portions are put away, well-corked, and used in the next operation. As No. I. is to be used first for moistening the next batch, this portion had better be 4 fluidounces, being the 4 ounces passing through the percolator immediately after the 12 fluidounces collected as fluid extract. The other portions may be, say: No. II., 12 fl. oz.; No. III., 16 fl. oz.

Of course, the 12 fl. oz. thus obtained in the *first batch* do not fully represent the 16 fl. oz. of drug; yet it is generally conceded that they contain, here as well as in most other drugs, practically all the *useful* constituents of the drug. In the next operation, the product will approximate already much closer to a standard fluid extract, and in the succeeding operations this will be obtained practically without any difficulty.

If we knew exactly which constituents of the 16 ounces of drug, and how much of each, the first 12 fluidounces collected did *not* contain, and which are therefore carried over into the second percolate, it would be an easy matter to make already the first batch of fluid extract perfect. All that would be required would be to weigh out the constituents obtained in any manner, to dissolve them so as to make 4 fl oz., and to add them to the 12 fl. oz. previously obtained. Yet even if this were possible, it is a question whether the fluid extract thus obtained would be permanent, as an artificial solution prepared in the manner described is very much different in behavior from a natural extract, which would probably make a much more permanent and better blended mixture.

As it is, the first fluid extract obtained is deficient by just so much of the constituents as are still contained in the drug. But these constituents are carried into the next lot of 16 troy ounces, when the second batch of fluid extract is to be prepared, and thereby add to the constituents of the latter just about as much extra matter as is finally left in it at the end of the percolation.

2. *Second Lot.*

Ginger, in very fine powder.....16 tr. oz.
Reserve Percolate I.....4 fl. oz.
do. do. II. (and III.).....(on hand).
Alcohol.....a suff. quant.

Moisten the Ginger with Reserve Percolate I., and proceed as in first lot. When packed, pour on top Reserve Percolate II., or if this has been collected in two lots, pour on II., and when this has just disappeared from the surface, pour on III. Collect the first 14 fluidounces of percolate and use this as *fluid extract*. Continue the percolation, using finally alcohol as menstruum, until the same amounts of reserves are collected as in the first lot.

3. *Third Lot.*

Proceed as in the preceding, but collect fully 16 fl. oz. of percolate or fluid extract this time, and continue to do so afterwards.

Make it a rule, no matter what the menstruum is, never to attempt to displace it from the drug with water or with any other menstruum, before the whole amount of fluid extract and reserves are collected.

The menstruum finally left in the drug may then be displaced by water, if possible. If it was alcohol, and the drug resinous, this will be easy. In others, such as squill, the water will so swell the drug that nothing will pass through after awhile. Sometimes the retained menstruum may be better recovered by taking the drug out of the percolator and suspending it tied in a bag and compressed, in the upper part of a vessel of water kept carefully covered. If the drug is bulky this will not answer, and the best way then is to transfer the whole residue to a still and distill off all the volatile liquid. In manufacturing establishments, stills of special construction are kept for such purposes. Those who work on a small scale will sometimes find it more economical to throw away a residue than to attempt to extract the menstruum. But here the water-bath percolator our correspondent asks us about may come in handy. By means of it, the alcohol or other volatile menstruum may be recovered so far as possible. Hence, while we cannot recommend it generally as a percolator, we think it nevertheless a serviceable piece of apparatus.

No. 1,983.—**Hardened Plaster of Paris** (H. B. B.).

We are asked the following questions:

"It is stated in the books, 1, that *stucco* is plaster made tenacious by a strong solution of glue. 2. That Parian cement is plaster hardened by water containing borax. Of these I have tried both, and found that it is impossible to have gypsum set with a strong solution of glue, and that it is very much weakened by the addition of a solution of borax. Could you give any information on the subject?"

Regarding *stucco*, we can only give the information that all authorities whom we have consulted agree in directing gypsum to be made into a magma with a solution of glue, which need, however, not be concentrated. The mass requires a longer time to set than when pure water is used for mixing, but the mass becomes harder in the end. If the cast is to remain white, colorless glue or gelatin must be used.

Regarding borax, we find that various authorities differ in the proportions and method of its use. Thus one writer says that the crude pieces of burnt gypsum should be saturated with a saturated solution of borax, again burnt for six hours, and then ground. A still better effect is said to be obtained with borated gypsum, by making the magma for casting with the aid of a cold saturated solution of cream of tartar. Michaelis (in Graham Otto's "Ausführlich. Lehrbuch der Chemie," II., 3, p. 626) criticises the proportions of borax and cream of tartar quoted by others, inasmuch as they are directed in larger quantity than cold water would dissolve; while, on the other hand, gypsum should not be made into a magma with a hot solution. He therefore believes that if these additions are really useful, cold saturated solutions would be all-sufficient.

It burnt gypsum, in lumps, is placed into a saturated solution of alum, afterwards dried in the air and again burnt at as low a heat as possible, the resulting powder, particularly if mixed to a magma with solution of alum, will yield very hard casts.

The same result can probably be obtained by intimately mixing finely powdered plaster of Paris with about two per cent of burnt alum, likewise in very fine powder, and making the magma with water. The addition to the water of a little solution of silicate of sodium (not prepared from the thick or gelatinous variety, but from the clear syrupy solution) will probably aid the setting.

When a cast has been made, the best way to harden it is to warm the cast to about 176° F. (of course, this method is not applicable to surgical plaster splints upon the body of the patient), and then to quickly brush it over with a glass brush dipped in a hot saturated solution of caustic

baryta, which must be carefully kept from the air until it is to be applied. The baryta will sink into the pores of the external layer of the cast, absorb carbonic acid from the air, and form carbonate of barium, which increases the density and hardness.

We presume that a mixture of plaster of Paris with powdered anhydrous borax would perhaps answer the purpose likewise; at least we should recommend to our correspondent to try it. Possibly, by taking a dilute solution of shellac and borax in water for making the magma, a satisfactory result may also be obtained. We should be glad to learn the results.

No. 1,984.—**Hypodermic Injections of Quinine** (W. A. B.).

Probably the most advantageous salts of quinine to be employed for hypodermic solutions are the double hydrochlorate of quinine and urea, or the lactate, or the *neutral* hydrochlorate, which latter is soluble in less than one part of water. The *neutral* hydrochlorates may be prepared from the *basic* salt, $C_{20}H_{24}N_2O_2.HCL.2H_2O$, either by double decomposition between the neutral sulphate or bisulphate: $C_{20}H_{24}N_2O_2.SO_4.7H_2O$, and crystallized chloride of barium, or by adding as much hydrochloric acid as is already contained in the salt.

In the first case, 548 grains of bisulphate of quinine will require for complete decomposition 244 grains of crystallized chloride of barium. Both salts are dissolved in water, the solutions mixed, heated, and allowed to cool (which renders the precipitated sulphate of barium less liable to run through the filter).

A small amount is first filtered and tested by a few drops of solution of bisulphate of quinine and of chloride of barium, to see if either salt is still present undecomposed. A trace of excess of the bisulphate is harmless, but an excess of the barium salt should not be permitted.

If the other method is adopted, 397 grains of crystallized basic (officinal) hydrochlorate of quinine are mixed with a few ounces of water and 114 grains of hydrochloric acid, U. S. Ph. (spec. gr. 1.160), added, or an equivalent quantity of a weaker or stronger acid.

On evaporating the solution of the salt, prepared by either of the above methods, the salt may be obtained in crystals or in a dry state.

No. 1,985.—**Dressing for Carriage Tops** (F. L. M.).

We have referred the question of what might be considered a good and serviceable carriage-top dressing to one of our friends, who replies that it very much depends upon what quality the leather is of which the top is made, and that it is not possible to give a method or formula which would fulfil all conditions. Good results may be obtained in many cases by making a mixture of boiled linseed oil, and about $\frac{1}{20}$ its volume of a strong solution of caoutchouc in oil of turpentine. This may be colored if desired, either by the mechanical admixture of some fine ground color, or by the aid of some of the colors soluble in oil, now obtainable in the market.

Another method is to prepare a zinc soap (crude oleate of zinc) by double decomposition between sulphate of zinc and castile soap, and thoroughly freeing the resulting zinc soap from soluble saline matters by treatment with boiling water. This zinc soap is then dissolved in its own weight of raw linseed oil at a moderate heat, and applied to the top. If the leather has been varnished, however, this dressing may not always penetrate it sufficiently.

No. 1,986.—**Mixture containing Pyrophosphate of Iron and Phosphoric Acid** (H. C. S.).

We are asked: "How would you proceed to fill the following prescription without having a precipitate form?"

℞ Quinin. Sulph.	gr.	18
Strychn. Sulph.	gr.	½
Ferri Pyrophos.		1
Acid. Phos. dil.		2
Syr. Zingiber.		2
Tr. Digitalis		1½
Aquæ.	q. s. ad	4

We have had occasion several times before to point out that the principal difficulty with mixtures containing *pyrophosphate* of iron and *phosphoric acid* is this, that the tribasic or officinal phosphoric acid is incompatible with pyrophosphates, as it throws them down in a gelatinous condition. In all cases where they are prescribed together, a special dilute phosphoric acid made from the *glacial* acid should be used. The National Formulary of Unofficinal Preparations, which is now in course of preparation, will contain a formula for this, probably in the following shape:

Acidum Metaphosphoricum Dilutum.

Diluted Metaphosphoric Acid.

Glacial Phosphoric Acid	750 grs.
Water enough to make	10 fl. oz.

Dissolve the glacial phosphoric acid in the water without heat, and filter.

Glacial phosphoric acid in lumps is preferable to that cast in sticks, as the latter contains a considerable proportion (sometimes more than twenty-five per cent) of phosphate of sodium, which is found necessary in order to give toughness to the sticks. The diluted acid prepared according to the above given formula contains about 10 per cent of metaphosphoric acid. If glacial acid in sticks is to be used, allowance should be made for the amount of impurities.

Now, if the prescription did not contain any quinine, there would be no difficulty. But the phosphate of quinine, which is formed when the phosphoric acid is added, is not as soluble as the sulphate and will be momentarily precipitated. On agitating, however, it will dissolve again. If the syrup of ginger is clear and permits dilution with water without becoming cloudy, the mixture, when finished, will be clear and will remain so at a medium temperature. On standing for some time, however, a turbidity will gradually make its appearance, which is partly due to the renewed separation of phosphate of quinine.

No. 1,987.—**Varnish for Oil Cloths** (J. E. L.).

Mr. L. asks: "What is the composition of the varnish used for varnishing fine table cloths and what substance imparts to it its peculiar odor?"

This is a matter which we are unable to throw any light on. We have asked some of our friends, who are more familiar with the subject, and they tell us that each manufacturer keeps his method secret. Most of them use a combination of varnishes, and one of them tells us that pale amber varnish is used by some German manufacturers and kauri varnish by some English ones. Should any of our readers be willing to supply the information, we would be much obliged to him.

No. 1,988.—**Varnish** (D. and W.).

We are requested to furnish the formula of a varnish used as "Furniture Polish" and containing as ingredients benzoin, shellac, alcohol, wax, and linseed oil, the inquirer having lost the original recipe.

Fortunately we can supply the desired information. The formula is, no doubt, that of Louis Köhler, published in 1877 (see Hager's "Pharm. Praxis," Supplem., p. 657). It is prepared by dissolving 24 Gm. (ab. 380 grains) of shellac and 4 to 6 Gm. (60 to 96 grains) of benzoin in one quart of 94 per cent alcohol. Linseed oil is directed *not* to be added to the varnish itself, but after the latter has been applied with a linen rag, it may be rubbed with the oil. For smoothening, a mixture of yellow wax and elutriated powdered pumice stone is employed.

No. 1,989.—**Detection and Separation of Antimony in Presence of Arsenic** (P., N. Y.).

It is impracticable to give more than a brief answer to the query of this correspondent, as the subject is too extensive to the fully treated of here.

If we had the case, supposed to be the one interesting our correspondent, that we had a solution *known* to contain arsenic (in form of arsenite of some base), and we suspected it to contain antimony, we would use either Lassaigne's or Dragendorff's method (see Fresenius' "Qualitative Analyse," 15th ed. [Leipzig, 1885], pp. 221).

To apply the first method, we recommend to evaporate the solution to a small bulk, then to add it very gradually and in small quantities to a flask in which a constant, slow current of hydrogen is being generated, taking care that a considerable excess of the latter gas always accompanies the arsenetted and antimonetted hydrogen produced in the reaction. The escaping gases are first passed through a tube containing broken glass, or pieces of pumice moistened with dilute solution of acetate of lead (to retain gaseous hydrochloric acid and sulphuretted hydrogen) and then through an aqueous solution of nitrate of silver. The antimonetted hydrogen will be decomposed so that a compound of silver and antimony is precipitated, while the arsenetted hydrogen forms arsenite of silver and remains in solution. A little of the antimony usually remains in solution likewise, but *no arsenic* is precipitated. The precipitate, however, contains free metallic silver besides the antimonide of silver. This precipitate is filtered off, washed with boiling water, and then heated to boiling with a aqueous solution of tartaric acid, which dissolves only the antimony (not the silver). In the filtered, colorless solution of tartrate of antimony, after it has been acidulated with hydrochloric acid, hydrosulphuric acid will produce the familiar orange-colored precipitate of sulphide of antimony, which may be further examined as to its identity.

According to the other method, the gases are generated in the same manner, and passed through a moderately wide glass tube containing a charge, at least 3 or 4 inches long, of small pieces of potassium hydrate. The latter decomposes the antimonetted hydrogen, and becomes coated thereby with a metallic gloss. The arsenetted hydrogen, however, is not decomposed and may be arrested in silver solution.

No. 1,990.—**American Pharmaceutical Association** (S. K.).

Membership in the association may be obtained by "any pharmacist or druggist of good moral and professional standing, whether in business on his own account,

retired from business, or employed by another, and those teachers of pharmacy, chemistry, and botany who, after duly considering the objects of the association and the obligations of the Constitution and By-Laws, are willing to subscribe to them." To be elected, you must make application in writing, best on a blank to be obtained from the Permanent Secretary, Prof. John M. Maisch, 143 North Tenth street, Philadelphia, Pa., and have the indorsement of two members of the association. The fees are: Two dollars initiation fee, and five dollars annual dues. Delegates from State or other associations, if present at the meeting to which they were nominated, can be elected without special application or indorsement by two members, but they must pay the same fees as others.

No. 1,991.—**Water Analysis** (S. W. T.).

To make a satisfactory analysis of water, a thorough preliminary training in qualitative and quantitive analysis is absolutely necessary. The best works giving detailed information on the subject are Fresenius' Qualitative, and especially his Quantitative Analysis; Fischer, "Die Chemische Technologie des Wassers;" Wanklyn and Chapman, "Water Analysis" (London); Frankland and Armstrong, in *Journ. Chem. Soc.*, XXI., p. 77; see also the same journal, XXI., 109; "Reports of the Royal Commission on Water Supply" (London); also the extensive report on Water and Water Analysis by Prof. J. W. Mallett in the Annual Report of the National Board of Health for 1882 (Washington, 1883: Appendix D, pages 190-353, with many tables).

No. 1,992.—**Listerine** (W. A. S.).

This is said to be composed of

Thymol	6 grains
Boric Acid	30 "
Oil Eucalyptus	4 min.
Oil Gaultheria	1 "
Alcohol	½ fl. oz.
Glycerin	½ fl. oz.
Water	to make 16 fl. oz.

No. 1,993.—**Permanent Syrup of Hydriodic Acid** (D. W.).

The officinal formula for preparing syrup of hydriodic acid, while it is capable, under careful management, of furnishing a satisfactory product, often fails in the hands of less experienced operators, either through overheating, which causes a decomposition of the acid, or from some of the hydrosulphuric acid gas being retained in it. A better preparation, and one more easily preserved, without alteration, may be made by decomposing iodide of potassium with tartaric acid. Mr. Donald L. Cameron, at the late meeting of the New York State Pharmaceutical Association, presented a paper on this subject, in which he likewise advocates this process. Samples of the syrup thus prepared were exhibited, and showed the advantage of the process by their good appearance. If a syrup of the officinal strength is to be prepared, the improved method below given may be used.

The officinal syrup contains one per cent of hydriodic acid. The specific gravity of the finished syrup is 1.300. Consequently 1 fluidounce weighs about 593 grains, and therefore contains 5.93 grains of hydriodic acid. Leaving aside the question of weight, and aiming only to make a product containing this quantity of hydriodic acid in 1 *fluidounce*, we proceed as follows:

Iodide of Potassium	123 grains
Tartaric Acid	112 "
Hypophosphite of Potassium	3 "
Water	q. s.
Alcohol	q. s.
Syrup	enough to make 16 fl. oz.

Dissolve the Iodide and Hypophosphite of Potassium in ½ fl. oz. of water, and the Tartaric Acid in a mixture of 2 fl. drachms each of alcohol and water; mix the two solutions in a vial, cork and shake it well, then place it in ice water for about ten minutes; again shake thoroughly, and filter through a *perfectly pure white* filter contained in a funnel, the stem of which dips below the surface of about 14 fl. oz. of syrup contained in a bottle. When the liquid has run through, wash the vial and filter with ½ fl. oz. of diluted alcohol, added in several portions. Then complete the volume by the addition of syrup to make 16 fl. oz. Keep the syrup in well-stoppered bottles.

The filtration must not be carried on in an atmosphere containing acid or other vapors which are liable to decompose the hydriodic acid. It is best to pour a few drops of ammonia water on the table near where the filtration is carried on. The hypophosphite of potassium (and probably other hypophosphites as well) appears to counteract the decomposition of the hydriodic acid, or at least to retard the commencement of the decomposition. At least this has been our experience so far. Since we have used it, we have had no trouble with our stock of this syrup, which had previously often given us cause of annoyance.

Formulas Asked For.

1. *Bull's Cough Syrup.* This is said by Stearn's *New Idea* to be ordinary molasses containing ¼ to ⅛ grain of sulphate of morphine in 1 fluidounce.
2. Jonas Whitcomb's Remedy for Asthma.
3. Dr. J. H. McLean's Strengthening Cordial.
4. Gombault's Caustic Balsam.

Deodorized Cod-Liver Oil.

A FORMULA given by the *Archives de Pharmacie* is as follows:

Cod-liver Oil	1,000 parts
Tar, Norway	4 "
Water of Ammonia	20 "

Dissolve the tar in the water of ammonia, add the solution to the oil, heat the mixture until it ceases to smell of ammonia, and filter after cooling.

[We have tried the method on a small scale, and have found that the odor and taste of the oil are, indeed, very well masked, though it cannot be said that it is "deodorized" in the true sense of the word.—ED. AM. DR.]

Betol.

BETOL is the name that has been given to a recently introduced compound of beta-naphthol with salicylic acid—the beta-naphthol ether of salicylic acid—analogous to that to which the name *salol* has been applied. The preparation, which is the subject of a patent, is described as melting at 95° C. (203° F.).—*Pharm. Centralh.* and *Pharm. Journ.*

Purifying Mixture for the Air of Sick-Rooms, etc.

A MIXTURE is prepared of

Oil of Rosemary	10 parts
" " Lavender	2.5 "
" " Thyme	2.5 "
Nitric Acid [of sp. g. 1.185]	30 "

Before use, it is well shaken, some of it then poured on a sponge, and the latter exposed on a plate for spontaneous evaporation.—*Pharm. Zeit.* and *Chem. Centralb.*

Note.—The source from which we take this does not specify the strength of the nitric acid. But, evidently, it would be inadmissible to use the strong acid of the U. S. Ph.; probably the acid of the Germ. Pharm., containing 30% of anhydrous acid, and having a spec. grav. of 1.185, is meant.—ED. AM. DR.

Corn-Cure Collodion.

JOHANNES BIENERT recommends the following composition, which he states to be as effective as that which is usually prepared with extract of Indian hemp:

Venice Turpentine	1 part
Chlorophyll	q. s.
Salicylic Acid	10 parts
Collodion	100 "

The author had been led by a recent report regarding the supposed noxiousness of the collodion with Indian hemp and salicylic acid (see above, page 144), to communicate the above formula.—*Parm. Zeitsch. f. Russl.*

Note.—Chlorophyll is here understood to mean the commercial *sap-green* (Succus viridis), which is prepared from the slightly fermented juice of ripe buckthorn berries (*Rhamnus cathartica* L.) with addition of small amount of potassa and alum, and evaporation to the consistence of an extract.—ED. AM. DR.

Antifungin.

A WHITE, sweet-tasting powder, said to consist of a soluble borate of magnesium, prepared by a special process, has been introduced under the name "Antifungin" as possessing extraordinarily powerful disinfecting properties, and as being a specific against diphtheria. It is said to be soluble in four parts of boiling water, and it is used in form of a fifteen-per-cent solution. From five to twenty drops, according to age, are administered every one or two hours, and about a teaspoonful is sprayed hourly in the sick-chamber. Further, the diphtheritic growth is painted with the solution every one or two hours until it disappears.—*Pharm. Centralh.* and *Pharm. Journ.*

Condensed Beef in Tablets.—These are being introduced into French practice under the name of *tabelettes Rousseau.* The preparation consists of condensed beef reduced to a powder by a new process; it is unalterable, pleasant to the taste, and easily digested. It is very rich in nitrogenous material and in phosphates, and its assimilation is rendered certain by complete and rapid peptonization. Each tablet contains 20 grammes (about 5 drachms) of beef powder, representing 80 grammes of fresh beef. According to the author, this preparation soon makes chlorotic and cachectic patients able to digest other kinds of nourishment easily.—*Br. and Col. Drugg.*

FORMULAS.

Some new Formulæ for Perfumes.

THE formulæ below given are taken from Eugen Dieterich's "Neues Pharmaceutisches Manuale" (Berlin, Springer, 1887. See foot-note in our June number, p. 119). As will be noticed, many of the formulæ contain as an ingredient triple extract of jasmin or tuberose, which the author points out can be made the basis of a great variety of different odors. The quantities are given in grains (by weight) unless otherwise specified.

1. *Essence of Ambergris.*

Triple Extract of Jasmin	770 grains.
Oil Rose	8 "
Oil Orris (liquefied by warming)	1 drop.
Ambergris	8 grains.
Tonquin Musk	¾ grain.
Vanillin	¼ "
Cumarin	¾ "
Alcohol	2,300 grains.

Rub the ambergris and musk with a few drops of water before introducing them into the alcohol. Macerate eight days and filter.

2. *Bouquet d'Amour.*

Triple Extract of Jasmin	770 grains.
Civet	½ grain.
Cumarin	½ "
Heliotropin	⅛ "
Oil Bergamot	48 grains.
" Lemon	5 drops.
" Lavender	3 "
" Cloves	1 drop.
" Orris [melted]	1 "
Alcohol	2,300 grains.

Prepare like No. 1.

3. *Ess. Bouquet.*

Triple Extract of Jasmin	770 grains.
Ambergris	2½ "
Musk	¾ grain.
Cumarin	¾ "
Heliotropin	¾ "
Vanillin	¼ "
Oil Rose	24 grains.
" Bergamot	8 "
" Neroli	8 "
" Geranium, French	5 drops.
" Ylang	5 "
" Rhodium	2 "
" Sassafras	2 "
" Cinnamon	2 "
" Wintergreen	2 "
" Orris [melted]	1 drop.
" Almond, essent	1 "
Alcohol	2,300 grains.

Prepare like No. 1.

4. *Heliotrope.*

Triple Extract of Jasmin	770 grains.
Heliotropin	5 "
Cumarin	½ grain.
Ambergris	⅛ "
Civet	⅛ "
Oil Rose	24 grains.
" Geranium, French	5 drops.
" Neroli	5 "
" Ylang	2 "
" Almond, ethereal	1 drop.
" Orris	1 "
Acetic Ether	5 drops.
Alcohol	2,300 grains.

Prepare like No. 1.

5. *Jockey Club.*

Triple Extract of Jasmin	460 grains.
" " " Tuberose	300 "
Spirit of Nitrous Ether	80 "
Storax, crude, liquid	80 "
Civet	½ grain.
Tonquin Musk	⅛ "
Cumarin	1½ grains.
Oil Rose	16 "
" Bergamot	8 "
" Geranium, French	5 drops.
" Neroli	5 "
" Cinnamon	2 "
" Rhodium	2 "
" Almond, essent	2 "
" Orris	1 drop.
Alcohol	2,080 grains.

Prepare like No. 1.

6. *Frangipanni.*

Triple Extract of Jasmin	460 grains.
" " " Tuberose	300 "
Tonquin Musk	⅛ grain.
Civet	¼ "
Cumarin	¼ "
Oil Santal [East-Ind.]	2 drops.
" Rhodium	2 "
" Rose	10 "
" Geranium, French	2 "
" Orris	1 drop.
Acetic Ether	5 drops.
Alcohol	2,300 grains.

Prepare like No. 1.

7. *Honeysuckle.*

Triple Extract of Jasmin	300 grains.
" " " Tuberose	300 "
Vanillin	⅛ grain.
Cumarin	⅛ "
Storax, liquid	32 grains.
Tonquin Musk	⅛ grain.
Oil Rose	16 grains.
" Geranium, French	5 drops.
" Orris	1 drop.
" Neroli	2 drops.
" Almond, ethereal	1 drop.
Alcohol	2,500 grains.

Prepare like No. 1.

8. *Patchouly.*

Oil Patchouly	24 grains.
" Rose	8 "
" Bergamot	8 "
" Geranium, French	5 drops.
" Sassafras	5 "
Cumarin	½ grain.
Alcohol	3,080 grains.

Prepare like No. 1.

9. *Spring Flowers.*

Triple Extract of Jasmin	620 grains.
Ambergris	2 "
Tonquin Musk	½ grain.
Cumarin	⅛ "
Heliotropin	⅛ "
Oil Rose	16 grains.
" Bergamot	16 "
" Geranium, French	8 "
" Neroli	8 "
" Ylang	3 drops.
" Cinnamon	3 "
" Orris [melted]	1 drop.
Alcohol	2,500 grains.

10. *Ylang-ylang.*

Triple Extract of Jasmin	300 grains.
Oil of Ylang	16 "
" Rose	8 "
Civet	½ grain.
Cumarin	⅛ "
Vanillin	⅛ "
Oil Geranium, French	5 drops.
" Orris [melted]	1 drop.
Alcohol	2,780 grain.

11. *Eau d'Amour.*

Oil of Bergamot	120 grains.
" Rose	64 "
" Ylang	16 "
" Neroli	16 "
" Orris [melted]	1 drop.
Tonquin Musk	¼ grain.
Ambergris	⅛ "
Cumarin	⅛ "
Acetic Ether	16 grains.
Spirit of Nitrous Ether	80 "
Triple Extract of Jasmin	770 "
Alcohol	12,800 "

12. *Eau de Bretfeld.*

Oil of Bergamot	300 grains.
" Lemon	80 "
" Cloves	32 "
" Lavender	32 "
" Neroli	24 "
" Rose	8 "
Tonquin Musk	½ grain.
Vanillin	⅙ "
Alcohol	14,000 grains.
Distilled Water	770 "

13. *Eau de Cologne.* I. (*Acid*).

Oil of Bergamot	160 grains.
" Lemon	80 "
" Rosemary, French, rect	80 "
" Neroli	48 "
" Cloves	16 "
" Ylang	4 "
Acetic Ether	16 "
" Acid	16 "
Alcohol	12,800 "
Distilled Water	770 "

13. *Eau de Cologne.* II. (*Acid*).

Oil of Bergamot	160 grains.
" Lemon	80 "
" Rosemary, French, rect	80 "
" Lavender, rect., best.	15 "
" Cloves	16 "
" Neroli	16 "
" Ylang	2 "
" Wintergreen	2 "
Acetic Ether	2 "
" Acid	16 "
Alcohol	12,800 "
Distilled Water	770 "

14. *Eau de Cologne.* III. (*Alkaline*).

Oil of Bergamot	180 grains.
" Lemon	80 "
" Rosemary, French, rect	32 "
" Neroli	16 "
" Lavender	8 "
Water of Ammonia	4 "
Alcohol	13,800 "
Distilled Water	1,500 "

Paste for Labels.

EUGEN DIETERICH recommends either of the following as good pastes for labels:

1. Mix 400 parts of dextrin with 400 parts of water, then add 200 parts more of water, add 20 parts of glucose and 10 parts of sulphate of aluminium (*not* alum), and heat in a steam-bath to about 90° C. (194° F.). The mass is at first thick, but gradually becomes clear and thin-fluid.

2. Reduce 400 parts of gommelin [a patented article, sold by Gehe & Co., of Dresden, and intended as a substitute for natural gum arabic. We presume it is identical with or at least closely related to the substance now much advertised, a note on which will be found in our May number, Query 1,914], to a coarse powder, dissolve it in 600 parts of cold water, add 10 parts of glucose and 20 parts of glycerin, and heat to 90° C. (194° F.).

Both of the above are very suitable for paper labels, postage stamps, etc., but the second formula yields the best product.—*Pharm. Centralhalle.*

Iodoform Pencils or Suppositories.

A CORRESPONDENT of the *Pharmaceutische Post* describes the following method of making iodoform pencils, which he has found preferable to any other.

Moisten the prescribed quantity of iodoform with a few drops of alcohol, then take a sufficient quantity of glycerite of tragacanth (1 part of tragacanth and 4 p. of glycerin) to make a stiff mass. Roll the mass in magnesia [the editor suggests lycopodium or powdered acacia], and having reduced it to the proper diameter, cut it into the proper number of pieces.

To Mask the Taste of Cod-Liver Oil—and probably also its odor, the following novel way is proposed in the *Pratique médicale:*

Cod-Liver Oil	1,000 parts.
Stockholm Tar	4 "
Water of Ammonia	20 "

Dissolve the tar in the water of ammonia; add the oil, shake well and boil until ammoniacal vapors are no longer given off. Then filter and add 8 drops of oil of star anise for every 36 or 37 fl. oz. of cod-liver oil.

Prescription for Summer Tonic.

Life for July 21st furnishes the following specimen of popular Latin:

℞ Spiritus Vini Otardi	ʒ i.
Spiritus Vini Jamaici	ʒ i.
Sugarum Whitum	ʒ iv.
Icibus Finis	ʒ ij.
Sliceum Pineappleii	quant. suff.
Strawberrii	" "

M. Sig. Shakitis violenter. Suckite dulciter cum strawum.